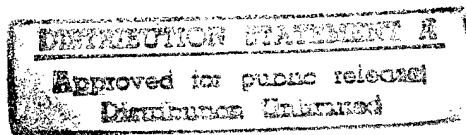


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3 APRIL 1986

# East Europe Report



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## EAST EUROPE REPORT

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AGRICULTURE

POLAND

PRIVATE FARM SECTOR CAPITAL FORMATION-INCOME RATIOS: 1979-82

Warsaw NOWE ROLNICTWO in Polish No 9, Sep 85 pp 21-25

[Article by Andrzej Piotr Wiatrak: "Correlation Between Earnings and Capital Formation on Private Farms During the Crisis Period"]

[Excerpts] On the private farm, the major source of income is the net production generated on the farm. Via prices and charges, this becomes divided between the farm economy and the national economy. Following these distributions, a part of the net production is left as the farm income. This income added to income earned outside the farm makes up the personal income of the farm family, the basis for its upkeep and capital formation.

The source material that is the basis for defining the income flow of the farm population for capital formation purposes is data from private peasant farms that kept account books for the Institute for Agricultural Economics and Food Management during two periods (fiscal year 1978/79 and calendar year 1982) in the following macroregions: I--east-central, II--central, III--west-central and IV--northern.

The regions used in the study were characterized by the territorial differentiation of production resources and by the volume of income earned. This made it possible to demonstrate more effectively their impact on the level of capital formation. At the same time, I am presenting 2 different years in which the growth trend of our economy was checked. The year 1978 was the last year preceding the decline in national income, while the year 1982 was the last year of the decline in the national income (its level in that year was the lowest in recent years). Thus, the years 1979-1982 may be known as a period of economic crisis, or in any event a period of production decline, a reduction in the level of the use of production elements and more and more of a decline in meeting consumer and production needs and the like. Thus, the first signs of this crisis (the decline in national income) occurred in 1978/79, and the situation in this regard was most severe in 1982. Moreover, it should be taken into consideration that during the period under analysis, certain changes occurred in the area of operation of Poland's economy (attempts to reform it) and farm policy. Consequently, when we analyze the two different years, we must take into account how the entire national economy operates and what impact this has on the development of peasant farms, and above all on their potential for implementing production needs. From

1979 to 1982, net terminal production and the income of the peasant population (expressed in 1977 constant prices) declined by an average of over 5 percent. At the same time, the years studied were relatively favorable ones in terms of production efficiency. In both of the years studied, in relation to the preceding year, the productivity of production elements did not decline. In 1978/79, the level of farm income rose. In 1982, it declined by comparison with the preceding year (while farm production rose); at the same time, farm income in 1982 was higher than in 1980. This was caused primarily by price changes in the national economy and by a worsening of the price ratios of articles bought and sold by farmers. The cessation of migration from peasant farms and the transfer of PFZ lands likewise were of some importance.

#### Results of the Study

The level of differentiation of the farm population income and capital formation are expressed in variability coefficients (table 2). Their analysis enables us to perceive specific patterns.

The variability coefficients of farm income, averaging 73 percent, assume the lowest value, while the variability coefficients of per-employ capital formation, averaging 130 percent to 135 percent, assume the highest value. In regional terms, the capital formation variability coefficients are likewise the most widely differentiated, while the farm income variability coefficients are the least differentiated.

The capital formation variability coefficients calculated per employe are higher in regions III and IV, where the average farm area is highest. Although they are not as explicit, similar correlations occur in the case of per-employe far income. This means that farm area largely impacts on the level of farm income, its differentiation and its distribution. This is reflected in the volume of capital formation and in its differentiation.

The differentiation of income earned outside the farm is quite significant in all regions. This indicates that all contain farms that have different levels of commitment to work outside the farm. A reduction in the differentiation of this income in 1982 shows that at the beginning of the 1980's, the number of farms with a dual occupation orientation declined. Based on the volumes of nonfarm income variability coefficients, this decline occurred primarily on larger-size farms.

Taking the highest value, we see that the per-employe capital formation variability coefficients are most widely differentiated regionally and temporally. These differences are clear, particularly in 1978/79. At the same time, it is characteristic that in 1982, the capital formation variability coefficients leveled off due to an increase in its differentiation in regions I and II and its simultaneous reduction in regions III and IV. By comparing tables 1 and 2, we may assume that the changes noted were caused by a reduction in the difference between the level of farm income and personal income in the regions studied, on the one hand, and by an increase in the differentiation of peasant population income in regions I and II as well as a decline in the differentiation of nonfarm income in the other two regions, on the other hand.

An analysis of the peasant population income and capital formation variability coefficients during the crisis period shows that substantial changes did not occur in the differentiation of these volumes. This may mean that peasant farms are interested in increasing their production assets, just as they were in the 1970's.

The correlation coefficients in table 3 express the relationship between capital formation and farm population earnings, while the regression coefficients in table 4 assess the effect of this income on capital formation. The numerical data shows that there is a very great correlation between farm income volume and capital formation. At the same time, an increase is noted in the role of farm income in calculating capital formation at the beginning of the 1980's and following the elimination of the impact of nonfarm income. This is indicated both by the total correlation coefficients and by the partial correlation coefficients. In the case of the total correlation coefficient, this relationship averaged 0.777 in 1978/79 and 0.826 in 1982, while in the case of the partial correlation it was somewhat higher, averaging 0.780 and 0.833 respectively. The lowest correlation between farm income and capital formation calculated per employe occurred in region I, where the average farm area is the lowest, increasing on larger-size farms. In region I, for example, the partial correlation coefficient relating per-employe capital formation and farm income was 0.720 in 1978/79 and 0.735 in 1982, while in region IV the figures were 0.837 and 0.839 respectively. The results of the study show that farm capital formation activity continues to be contingent largely upon farm area, particularly when the workforce is better equipped with the means of production and when farm production income is higher (in region III, for example). The regression coefficients (table 4) also express this correlation. In the population studied, an increase is noted in the level of correlation in the factors studied in 1982. This means that not only did the reduction in production and income during that year reduce the tendency towards capital formation, but it also contributed to its increase. This is especially characteristic of the central region (II), in which farms designated 46.7 percent of farm income for capital formation.

The increase in per-employe income contributed to an increase in per-employe capital formation averaging 52.9 zlotys in 1978/79 and 57.5 zlotys in 1982. An estimate of the total regression coefficients yielded these results. Meanwhile, in the case of partial regression, these coefficients were somewhat higher, with the increase amounting to 53.2 zlotys and 58.6 zlotys respectively. Regionally, these coefficients (except in region II in 1982) are less differentiated than the correlation coefficients, but on the basis of their volumes, it may be assumed that:

Farm area combined with farm labor machinery has the greatest impact on the growth of capital formation dependent upon farm income. In conjunction with this, on the largest farms and the farms that are better equipped with the means of production, the regression coefficients are the highest (region III), while conversely, they are lowest on farms with a small area that are relatively poorly equipped with the means of production (region I).

An insufficient amount of farm machinery by comparison with farm area increases the need for the means of production and the need for capital formation to increase production assets and improve the ratio of production elements (region IV).

Peasant farm capital formation activity in 1978/79--1982 was quite significant and manifested a growth trend, especially in regions I and II, while at the same time it was halted in regions II and IV. This decline was insignificant; furthermore, capital formation growth impacted by farm income in region IV was higher than in region I, while in region II it exceeded the average level for the whole group.

The greatest increase in capital formation impacted by farm income in 1982 occurred on farms in region II, those with an average area and a moderate supply of farm machinery that nonetheless attained farm income that approached the average level of the entire population studied and the highest nonfarm income. At the same time, an increase in the differentiation of farm income is noted, indicating that in this region there may be a fairly large number of strong (developmental) farms whose production needs require earmarking a larger portion of income for investment and capital formation that may be covered from income earned outside the farm. Nonfarm income as a supplement to the farmer's budget enables an increase in the share of capital formation in the farm income and sometimes also allows for a direct effect on the level of capital formation, as the results of the study show.

In the farm population studied, generally speaking the correlation between the level of nonfarm income and per-employe capital formation is not great, since the total correlation coefficient is almost zero (table 3). On the other hand, taking into account the partial correlation coefficient between these characteristics (i.e., with the impact of farm income eliminated), we see an increase in these coefficients (0.106 in 1978/79 and 0.191 in 1982). The differences noted in the correlation coefficients emanate from the negative correlation between farm income and nonfarm income, since as farm income grows (and with it, capital formation volume as well), nonfarm income generally declines. Based on the total correlation coefficient, this leads to a reduced, and sometimes negative, correlation between capital formation and nonfarm income. This is especially clear in the regional comparison of these coefficients (table 3).

As a result of the correlation noted between the two sources of peasant population income, the per-employe increase in nonfarm income of 100 zlotys caused a per-employe capital formation increase of 9 zlotys in 1978/79. Broken down regionally, this was 8.2 zlotys in region I, 16.4 zlotys in region II and 85.3 zlotys in region IV, while in region III, there was a decline of 50.3 zlotys. In 1982, the increase of this per-employe income of 100 zlotys was accompanied by a reduction in capital formation averaging 0.5 zlotys. Regionally, this broke down into 11.4 zlotys in region II and 40.5 zlotys in region IV, while the per-employe increase in capital formation in region I was 16.2 zlotys and 28.3 zlotys in region III. The regional differentiation of total regression coefficients indicates that nonfarm income contributes to an increase in capital formation primarily

on farms that attain lower farm income (for example, in regions II and IV in 1978/79 and in region I in 1982). A reverse correlation occurs in the case of the attainment of high farm income by farms (for example, in region IV in 1982), although in this case, the level of nonfarm income also must be taken into account (tables 1 and 4). On most farms, nonfarm income plays an auxiliary role and in order to define its importance in the capital formation increase, the impact of farm income must be eliminated. Then, as the estimate of the partial regression coefficients shows, the importance of nonfarm income grows in the capital formation increase. In the group of farms studied, the per-employe increase in nonfarm income of 100 zlotys caused a per-employe increase in capital formation averaging 20.4 zlotys in 1978/79 and 31.5 zlotys in 1982. At the same time, a fairly large capital formation increase impacted by nonfarm income on farms located in regions where farm area is larger is noted. This means that on smaller-size farms, even where the nonfarm income is higher (as in region II, for example), it does not play a significant role in the capital formation increase.

Thus we may assume that this nonfarm income is designated primarily for consumption. On the other hand, the correlation between it and capital formation emanates from the tendency of farmers to adjust the level of the farm means of production at least to the average level in the region. This takes place in various ways, including via nonfarm earnings, but this process does not affect all farms.

The analysis conducted shows the impact of peasant population earnings on capital formation, an effect that is differentiated according to region. If we take the impact of farm income and nonfarm income on the level of per-employe capital formation as 100, we discover that the farm income of the group of farms studied explained an average of 90 percent of the capital formation increase, while nonfarm income accounted for the remaining 10 percent. At the same time, a greater significance is noted for farm earnings in the capital formation increase in 1978/79 than in 1982, and there is an increase in the importance of nonfarm earnings in this regard in 1982. By comparing this data we see that in 1982, the level of farm income was insufficient, making nonfarm income necessary for an increase in the production assets of peasant farms. The system of food rationing (that affected the dual-occupation populace only slightly) likewise may have had an effect on this, since it meant the need to increase production outlays for many farms.

#### Conclusions

The analysis conducted shows that both farm income and nonfarm income contribute to the capital formation increase on peasant farms. At the same time it is clear that capital formation activity does not decline with a higher level of farm income, for it is on these farms (in region III, for example) that the capital formation increase impacted by farm income is the highest. Nonfarm income has the same impact on the capital formation increase. This means that the dual-occupation populace for the most part is interested in developing its farms. Moreover, the results of the study indicate that during the period of a decline in the development of the Polish economy, there was not a reduction in the trend towards capital formation, but even a certain increase

by comparison with the 1970's, primarily in regions demanding an increase in production assets. This is a favorable process, especially if we take into account the incomplete meeting of the demand of peasant farms for the means of production and the lack of differentiation of the supply of these means. At the same time, we must take into account the fact that the shortage of the means of production for farming and the lack of differentiation of their supply likewise could have caused a reduction in the rate of the capital formation increase on larger-sized farms that generally require an increase in outlays for more capital-intensive equipment when the demand for the basic means of production has been met. Equally, every group of farms may have been affected by the wide-scale price increases for the means of production and consumption in 1982 and by the widening of the price gap to the detriment of peasant farms.

Table 1. A Characterization of Peasant Farms Studied\*

<u>Regions</u>	<u>Number of farms studied</u>	<u>Farm area in hectares</u>	<u>Farm machinery</u>		<u>Farm income</u>	<u>Nonfarm income</u>	<u>Personal income (farm + nonfarm)</u>	<u>Capital formation</u>	<u>Share of capital formation in personal income</u>		
in thousands of zlotys in current prices per employe											
1978/1979											
I	138	7,93	69,2	68,4	6,0	74,4	28,4				
II	234	8,37	59,8	65,5	11,2	76,7	26,1	38,1			
III	217	10,13	78,0	81,0	7,4	88,4	28,2	34,0			
IV	130	9,99	57,9	62,8	7,7	70,5	16,4	31,9			
Total	719	9,11	66,8	70,3	8,4	78,7	25,5	23,2			
Total											
1982											
I	124	7,74	234,3	182,6	18,2	200,8	64,6				
II	246	8,46	236,7	187,3	29,5	216,8	87,5	32,1			
III	212	10,13	290,6	193,4	28,8	222,2	66,3	40,3			
IV	135	10,85	222,0	198,1	26,1	224,2	74,5	29,8			
Total	717	9,28	249,4	190,4	26,7	217,1	74,8	33,2			
Total											

\*Considered average for the study group.

Source: Author's calculations based on "Individual Results of Farm Accounts of Peasant Farms From 1978/79 and 1982." IERiGZ materials.

Table 2. Variability Coefficients of Peasant Population Income and Capital Formation

gions	1978/79			1982		
	farm income	nonfarm income	capital formation	farm income	nonfarm income	capital formation
	63,3	119,6	103,2	65,0	149,7	126,8
	69,7	132,6	112,2	73,8	125,8	124,5
	73,7	133,1	150,2	69,2	116,2	142,1
	80,9	126,8	211,3	84,7	118,1	134,2
otal	73,0	129,3	137,4	73,5	125,8	131,9

Source: as in table 1.

Table 3. Correlation Coefficients Between Peasant Population Income and Capital Formation

gions	1978/79			1982		
	Coefficients of correlation of per-employe capital formation from:					
	per-employe farm income	per-employe nonfarm income	per-employe farm income	per-employe nonfarm income	per-employe farm income	per-employe nonfarm income
Total correlation coefficients						
I	0,717	0,020	0,720	0,054		
II	0,721	0,083	0,861	-0,039		
III	0,838	-0,117	0,830	0,101		
IV	0,775	0,239	0,835	-0,125		
otal	0,777	0,030	0,826	-0,002		
Partial correlation coefficients						
I	0,720	0,072	0,735	0,141		
II	0,788	0,046	0,867	0,200		
III	0,721	0,107	0,838	0,237		
IV	0,837	0,268	0,839	0,188		
otal	0,780	0,106	0,833	0,191		

Source: as in table 1.

Table 4. Coefficients of Regression Between Peasant Population Income and Capital Formation

<u>Regions</u>	<u>1978/79</u>		<u>1982</u>	
Assessment of impact on per-employe capital formation (zlotys/ 1 zloty):				
	farm income	nonfarm income	farm income	nonfarm income
Total regression coefficients				
I	0,486	0,082	0,496	0,162
II	0,462	0,164	0,567	-0,114
III	0,594	-0,503	0,584	0,283
IV	0,531	0,853	0,498	-0,405
Total	0,529	0,090	0,575	-0,005
Partial regression coefficients				
I	0,491	0,339	0,507	0,290
II	0,461	0,090	0,672	0,294
III	0,599	0,163	0,588	0,373
IV	0,525	0,736	0,515	0,347
Total	0,532	0,204	0,586	0,315

Source: as in table 1

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ECONOMY

INTERNATIONAL AFFAIRS

#### CEMA COUNTRIES ON EVE OF FIVE-YEAR PLANS VIEWED

Prague PLANOVANE HOSPODARSTVI in Czech No 12, 1986 pp 67-79

[Article by Doc Eng Ludek Urban, CSc and Eng Ondrej Ler]

[Text] This year the European CEMA countries have entered the final year of implementing their 5-year plans for 1981-1985. This is an important period, because during its course assessments will be made of the final results of the 5-year plans and the degree of fulfillment of the economic-political goals which were set during the transition between the 1970's and 1980's by sister communist and worker parties. 1985 is also the starting point for the next 5-year period, when the tasks will be more complicated than the present ones. According to current information, many countries will be contemplating a substantial acceleration of their economic growth. Under the present conditions, however, this can be done only by effecting profound qualitative changes in the whole replacement process.

It is, of course, too soon to make a comprehensive assessment of the results of the first half of the 1980's; nevertheless it is possible to draw, on the basis of an analysis of the economic processes during 1981-1984 and the plans for the current year, certain important conclusions which could be helpful in clarifying the tasks of the next 5-year period.

#### Overall View of the Dynamics of Economic Development

The nature of the 5-year plans for the European CEMA countries for 1981-1985 has been already described in detail. Let us mention at least the fact that most of the countries counted with a decline in the dynamics of economic development, with production of the national income being higher than its consumption, with a decline in the increments of investments, and in many cases with only modest goals in the area of living standards. At the same time, the fulfillment of the assigned substantive tasks was generally contingent on substantial progress in starting the national economy on the path to intensive development.

The development in the external economic and political environment and some quite specific and unusual circumstances, which in many cases could not have been foreseen, had a great impact on the drafting, approval, and implementation of the 5-year plans. We have in mind mainly the prolonged economic

crisis of the capitalistic countries, the sharp worsening of the international political atmosphere as a consequence of the confrontational stance of the U.S. Government, the socio-political crisis in the Polish People's Republic, the changes in the Soviet deliveries of fuel and energy resources to other Soviet deliveries of fuel and energy resources to other CEMA countries, caused by techno-economic circumstances, as well as the increases in their prices. In addition, there were also the unfavorable weather conditions, which during the course of the past 4 years several times significantly influenced the course of the economic processes, and not in agriculture alone. We must not fail to mention also the lack of success in implementing fully the projected increase in effectiveness. All this was quite significantly reflected in the economic results of the European CEMA countries and their economic policies, including the plans for integration.

The economic growth of the European CEMA countries during the past 2 years can be evaluated from several viewpoints, primarily, however, from the viewpoint of a declining trend in the rate of growth since the second half of the 1970's and the beginning of the 1980's, and of the probability of fulfilling the 5-year plans.

The declining trend of the rate of growth of the national income of the European CEMA countries as a whole, which characterized the second half of the 1970's and the beginning of the 1980's, was halted in 1982 (see Table 1 and Graph 1). Certain realities however point to the fact that factors influencing the decline of the rate of growth have not been actually totally overcome during that time. The national income of the 6 countries as a whole (Footnote 1) (Taking into account the considerable differences in the size of the macroeconomic complexes as well as in the importance of foreign economic relations between the USSR and other European CEMA countries, it is in many cases useful to give individual attention to USSR and the six countries--Bulgarian People's Republic, CSSR, Hungarian People's Republic, German Democratic Republic, Polish People's Republic and Rumanian Socialist Republic) stagnated in 1982 and if we take into consideration only the Bulgarian People's Republic, CSSR, Hungarian People's Republic, German Democratic Republic, and Rumanian Socialist Republic, we even have to come to the conclusion that their combined national income grew less than that in 1981 (by slightly less than 2 percent compared to less than 3 percent). The acceleration of the growth of the national income in USSR in 1982 was caused by a significant rise in agricultural production (by 5.5 percent compared to a decline of 1 percent in the previous year--see Graph 3), while the dynamics of industrial production have been declining up till 1982 (see Graph 2). A turn-around in the trend of economic growth of the whole region should therefore be more accurately dated only since 1983, when the increments of the determining branches--industrial production--increased, in the group of the 6 countries as well as in USSR.

Table 1

## (1) Plánovaný a skutečný vývoj tvorby národního důchodu evropských zemí RVHP v letech 1976—1985 (průměrná a roční tempa růstu v %)

Země [oblast]	(2)	1976—1980	1981—1985	1982	1983	1984	1985	1981—1985 <sup>1</sup>
BLR (3)	P	7,7	3,7	5,1	3,6	3,8	3,8	4,1
	S	6,1	—	5,0	4,2	3,0	4,6	4,2
CSSR <sup>2</sup> (4)	P	5,0	1,4 (1,8)	2,5 (2,8)	—0,2 (0,5)	1,6 (2,0)	2,8*	3,0
	S	3,7	—	—0,1 (0,8)	0,2 (0,6)	2,3 (2,7)	3,0	3,7
MLR (5)	P	5,4—5,7	2,7—3,2	2,0—2,5	1,0—1,5	0,5—1,0	1,5—2,0	2,3—2,8
	S	2,8	—	2,5	2,6	0,3	2,8—3,0	2,2
NDR (6)	P	5,0	6,1	5,0	4,8	4,2	4,4	4,3
	S	4,2	—	4,8	2,6	4,4	5,5	—
PLR (7)	P	7,0—7,3	3,5—5,6 <sup>3</sup>	—	—	2,0—2,5	2,6	3—3,5
	S	1,2	—	—12,0	—5,5	—	5,1	4,7
RSR (8)	P	11,0	7,5	7,0	5,5	5,0	7,3	10,0
	S	7,3	—	2,2	2,7	3,7	7,7	—
Sest zemí celkem (9)	P	7,0	3,3	2,8	2,4	3,2	3,9	4,8
	S	3,9	—	—1,9	0,1	3,9	5,1	2,4
SSSR (10)	P <sup>5</sup>	4,7	3,4	3,4	3,0	3,3	3,1	3,5
	S	4,3 (3,8) <sup>6</sup>	—	3,3 (3,2) <sup>5</sup>	3,9 (3,6) <sup>5</sup>	4,2 (3,6) <sup>5</sup>	3,0 <sup>4</sup>	3,3
Evropské země RVHP celkem (11)	P	5,3	3,7	3,2	2,8	3,3	(2,6) <sup>5</sup>	4,2
	S	4,2	—	1,7	2,8	4,1	3,6	3,3

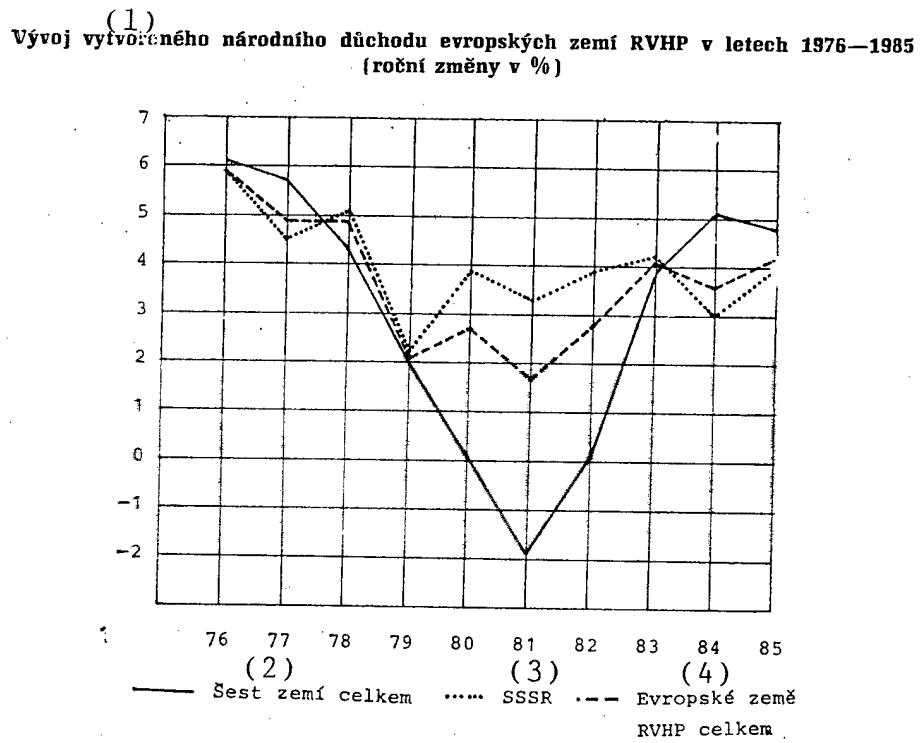
(12) Pozn.: P — plán; S — skutečnost; <sup>1</sup> Na základě průměrného ročního tempa růstu v letech 1981 až 1984 a plánu na rok 1985; <sup>2</sup> v případě PLR na základě výsledků let 1983—1984; <sup>3</sup> 1983—1985; <sup>4</sup> Odhad Hospodářské komise OSN pro Evropu; <sup>5</sup> Užitý národní důchod.

(13) Pramen: Národní statistiky, statistická zprávy o ročních výkonech, plány; Economic Survey of Europe in 1981—1985, ECE, Geneva 1985.

KEY:

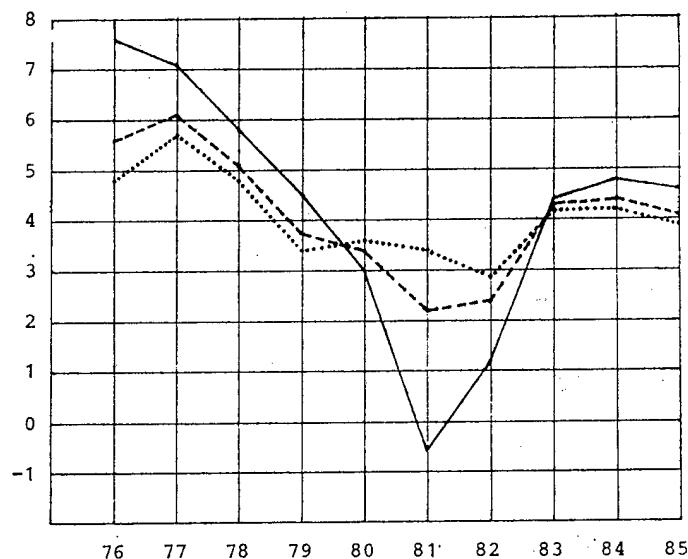
- (1) Planned and Actual Development of Produced National Income of the European CEMA Countries in 1976-1985 (average and yearly rate of growth in percent)
- (2) Countries (region)
- (3) Bulgarian People's Republic
- (4) CSSR
- (5) Hungarian People's Republic
- (6) German Democratic Republic
- (7) Polish People's Republic
- (8) Rumanian Socialist Republic
- (9) 6 Countries as a Whole
- (10) USSR
- (11) European CEMA Countries as a Whole
- (12) Note: P--plan; S--reality; <sup>1</sup>On the basis of the average yearly rate of growth in 1981 to 1984 and the plan for 1985; In the case of the Polish People's Republic on the basis of results in 1983-1984; <sup>2</sup>In parentheses gross national income; <sup>3</sup>1983-1985; <sup>4</sup>Estimate by the Economic Commission of the U.N. for Europe; <sup>5</sup>Consumed national income.
- (13) Source: National statistics, statistical reports on annual results, plans; Economic Survey of Europe in 1984-1985, ECE, Geneva 1985

Graph 1



Graph 2

(1) Vývoj hrubé průmyslové výroby evropských zemí RVHP v letech 1976—1985  
(roční změny v %)

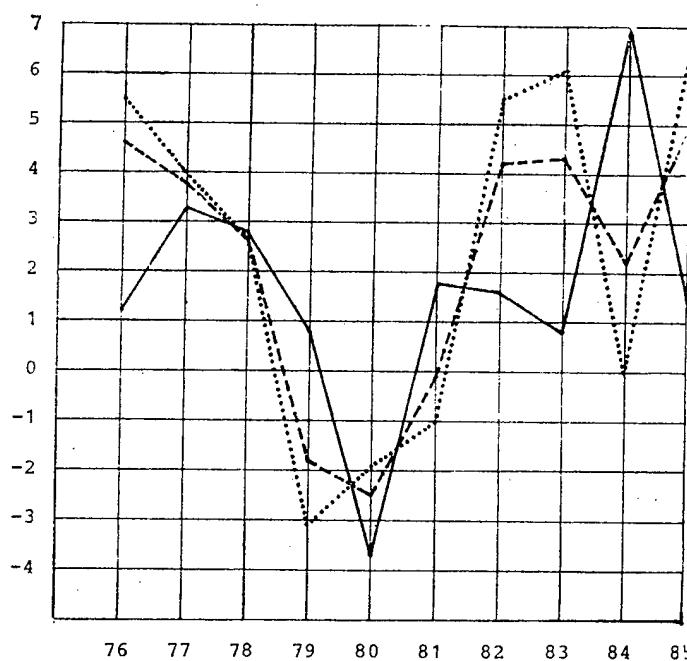


KEY:

(1) Development of Gross Industrial Production in European CEMA Countries in 1976-1985 (annual changes in percent)

Graph 3

(1) Vývoj hrubé zemědělské produkce evropských zemí RVHP v letech 1976—1985  
(roční změny v %)



KEY:

(1) Development of Gross Agricultural Production in European CEMA Countries (annual changes in percent)

The combined national income of the European CEMA countries grew roughly by 3.6 percent last year, compared to 4.1 percent recorded in 1983. In comparison with the results in 1981-1982, we are therefore still talking about a dynamic development. The rate of growth of produced national income of the 6 countries as a whole rose at the same time by 3.9 percent, reaching 5.1 percent in 1983. In contrast, the rate of growth of the USSR national income, separated into consumption and net income formation (consumed national income), declined from 3.6 percent to 2.6 percent, while the increment of the USSR produced national income fell from 4.2 percent in 1983 to an estimated 3 percent in 1984. This was caused by the stagnation of agricultural production as a result of poor harvests; the increment of industrial output in USSR last year remained at the high level of 4.2 percent.

The results in industry last year were the best of the current 5-year plan (see Graph 2). The increment of industrial output in the region reached 4.4 percent, which was more than the plan called for (4 percent) and also more than in 1983 (4.3 percent), and the most since 1978 (5.1 percent). The rate of growth of industrial output at the same time exceeded the level of 1983 in all countries with the exception of Poland; in USSR the increments were the same in both years.

The increment of gross agricultural production of the European CEMA countries last year was more than 3 times higher than the plan called for, and reached 6.9 percent. That was the best result of the current 5-year plan, and it contributed significantly to the consequent rate of their economic growth. These countries achieved good results particularly in grain harvests. The grain harvests in all 6 countries were of record or near record proportions (Bulgarian People's Republic). The total grain production in this group thus came close for the first time to the 100 million ton boundary (in precise terms it reached 99.5 million tons), which is only slightly less than required by the 5-year plans for 1985, and a quarter more than the average in the second half of the 1970's. The good harvests were primarily the result of high yields.

The grain harvest in USSR was substantially lower in 1984 than in 1983; FAO estimates it at 170 million tons, which is 30 million tons less than the previous year (also according to FAO). The results of Soviet agriculture (or rather of their plant production) can be explained to a certain degree by the impact of unfavorable weather. Considering the great size of the country and diverse geographical and climatic conditions, however, weather can hardly be the sole explanation. In a commentary on last year's harvest, even the Soviet newspaper PRAVDA pointed this out on November 26, 1984, when it drew attention to the great differences in yield among the neighboring economies. The USSR agricultural policy is now taking the direction of concentrating production more on land where the effects of the weather can be controlled up to a point, rather than on further increases of areas under cultivated. The resolution of October 1984 concerning amelioration has just this goal.

As far as last year's results in individual countries are concerned, certain facts need to be pointed out. The national income of the Polish People's Republic rose for the second year in succession by more than 5 percent, which proves that the country is returning to a normal development. At the same time we cannot overlook the fact that the national income of the Polish People's Republic has not yet reached the 1975 level, while foreign payments still pose a great problem. An acceleration of the rate of economic growth occurred in 1984, with the exception of the Polish People's Republic and USSR, in all the countries of the region, most strikingly, however, in the Hungarian People's Republic (2.8-3.0 percent compared to 0.3 percent) and the Rumanian Socialist Republic (7.7 percent compared to 3.7 percent). The Rumanian Socialist Republic together with the German Democratic Republic also showed the largest increments to the national income (German Democratic Republic plus 5.5).

Many factors contributed to the accelerated economic growth of the region in 1983 and 1984. Analyses of this subject made thus far dealt mostly with those factors which contributed to the process of eliminating bottlenecks in inputs. The principal ones are:

- growth of production in the branches of fuels and energy, metallurgy, and chemical industry;
- favorable developments in agriculture in 3 consecutive years in most countries, the result of which are much improved supplies of agricultural products for the national economy;
- bigger imports by the 6 countries;
- increased investment activities.

On the other hand, the overall improvement in effectiveness lagged behind expectations. Labor productivity was something of an exception. From available data concerning development of employment in the production sphere and of labor productivity, it can be seen that during the past year labor productivity in most of the European CEMA countries continued to grow at a rate close to the growth of the national income or even higher, as was the case in Hungary. In the Bulgarian People's Republic, for example, the total increment to the national income came as a result of higher labor productivity, in the Hungarian People's Republic labor productivity rose by more than 3.5 percent, in the German Democratic Republic by 5 percent, and in USSR the growth of labor productivity contributed 94 percent to the increment of the national income.

As far as the efficacy of capital assets is concerned, it can be assumed that in most countries it continued to decline, even though it is probable that as a result of the slowdown in the growth of fixed assets, the rate of decline of their efficacy abated. In the Polish People's Republic, where unusually low investments slowed down the growth of capital assets to the extent that in 1983 they rose considerably less than the national income, their efficacy last year probably increased, as it did in the previous year.

The economic growth of European CEMA countries in 1980 to 1982 was limited, among other things, also by inadequate inputs of some materials. The consequent increase of production of the appropriate branches contributed to the elimination of the bottlenecks in question. An approximate evaluation of how material intensive the development of European countries is, can be made on the basis of the relationship between the gross national product and the national income (keeping in mind that the national product includes, beside a number of duplicate items, also depreciation).

In the 1960's, the economic growth of the European CEMA countries was linked, in most cases, to the growth of material intensiveness. With the exception of the Hungarian People's Republic and the USSR, the gross national product grew in all countries by roughly 1-1.5 points faster than the national income, while in the Soviet Union in the 1960 material intensiveness expressed in those terms declined.

In the first half of the 1970's, the ratio between the growth of the gross national product and the national income, with the exception of the Polish People's Republic and USSR (worse) and the Rumanian Socialist Republic (better), did not change much. In the second half of the past decade we can talk about a worsening development only in the case of the Hungarian People's Republic and the German Democratic Republic, whereas a number of other countries, most of all however the USSR, showed an improvement. From 1981 to 1984, the above mentioned ratio in most of the countries was, on the average, stagnant or it improved (most significantly in the German Democratic Republic); practically the only exception was CSSR (as a result of a low rate of growth of the national income). The comparison of the growth of the gross national products and the national income in the 1961-1984 period, however, leads to a surprising conclusion, that the overall material intensiveness of production during the past almost quarter century has not really changed in any substantial way (a more rapid growth of the gross national product can be partially explained also by a higher depreciation rate and a more extensive vertical integration of the economy in recent years, nevertheless, this can hardly negate the possibly greater decline of the material intensiveness).

The overall level of material intensiveness in the European CEMA countries in comparison with contemporary technological standards is very high, and about 30-40 percent higher than in economically advanced capitalist countries. The output of energy and raw materials in the region cannot grow in the future at the same rate as it did in the past. In the long term outlook, the problem of material resources can be resolved therefore only by a broad introduction of new technologies, accompanied by far-reaching changes in the structure of production and of production consumption. The achievement of permanent savings of energy and raw materials per unit of production is thus greatly dependent upon the volume of investments, structural reconstruction, and effective changes in the system of planned management of the national economy.

According to the yearly plans, the national incomes of the European CEMA countries should grow by about 4.2 percent this year, in the 6 countries by 4.8 percent. It can be concluded on the basis of this that the European

CEMA countries at present are making an effort, generally speaking, to stabilize the mid-term rate of development at a level roughly equal to that of the 1983-1984 period. At the same time, it can be deduced from available information concerning the blueprint for the next 5-year plan, the CSSR will make an effort to achieve an average increment to the national income of 3.5 percent between 1986-1990, which represents, in comparison with the expected average for all of the first half of the 1980's, a significant acceleration, USSR for a minimum of 4 percent (acceleration), the Hungarian People's Republic in the preliminary basic version of the 5-year plan for 2.5 percent to 3.2 percent (sharp acceleration), and the Polish People's Republic for 3-4 percent (some decline from the rate of 1983-1985). According to Soviet academician O. Bogomolov, the CEMA countries should try to achieve an average 3-5 percent yearly rate of growth of the national income.

The key object of the plans for this year is the improvement of the effectiveness of production. Experience has shown that the complexity of changing to an intensive type of development exceeds original expectations. This is reflected also in statements by the highest representatives of individual countries, in which they point out the fact that in reality the national economies have taken only the first step toward intensification. "We know that thus far we cannot consider the changes in the mode of the economy to be a fundamental turnaround; we know that our economy is still far from functioning according to the comprehensive criteria of an intensive development," stated member of the Presidium of the Central Committee of the Czechoslovak Communist Party and Prime Minister of CSSR Lubomir Strougal in his address in April of last year in Kosice.

From pronouncements and available reports of plans being prepared for the 1986-1990 period and up to the year 2000 we can at the same time deduce that the deciding turn in this direction has to be achieved in the second half of the 1980's. For example, Secretary General of the KSSS Central Committee Mikhail Gorbachov spoke at a conference on research and development, which took place in the KSSS Central Committee in June last year in connection with planning the main directions of economic and social development of the country for the Twelfth 5-Year Plan and up to the year 2000, about new approaches which would ensure "a fundamental turn toward the intensification of the economy."

Let us now try to answer the second of the above mentioned questions--what is the probability of fulfilling the 5-year plans in the light of past surveys? From the point of view of the tasks of the 5-year plans and of the actual development, we can divide the 1981-1984 period into 2 time segments; the transition between the two is the year 1982, in some countries the year 1983. In the first time segment, the rate of growth of the national income of some of the countries was below the level of the tasks of the 5-year plans, whereas in the second segment it exceeded it. This holds true in the case of CSSR and the Polish People's Republic (the Polish 3-year plan counts here for the 5-year plan; in both instances 1981-1982 and 1983-1984). In the other countries this division is not as clear-cut. In Bulgaria, the rate of growth of the national income exceeded the level of the goals of the 5-year plan in all of the 1981-1984 period with the exception of 1983. In

the Soviet Union the actual rate of growth was lower than the planned average level only in 1981 and 1984. In the German Democratic Republic and especially in the Rumanian Socialist Republic the yearly results exceeded the average rate established for all of the 5-year period only in 1984. In Hungary the economic growth fluctuated below the level of the tasks of the 5-year plan practically during the whole period; only last year (2.8-3.0 percent against 2.7-3.2 percent) did it reach the required levels.

On the basis of the results between 1981-1984 and plans for 1985, it can be assumed that in this 5-year period Bulgaria will reach a higher rate of growth than it planned, and that the average yearly rate of growth of the consumed national income in USSR will almost conform to the task of the Eleventh 5-Year Plan (see Table 1). The results in CSSR will be slightly below the lower boundaries of the planned increase of the rate of growth, and in the Polish Peoples' Republic the actual development will correspond with the planned rate. In the case of the 3 remaining countries, however, the final average yearly rate of growth of the national income will, even in the event that the tasks of this year's plan are fulfilled, be below the level of the 5-year plan; more so in Bulgaria, which has the most ambitious plan of the whole region.

#### Development of the Consumed National Income

One of the important features of the economic development of the European CEMA countries in 1981-1985 is the lead-time of the produced national income over its use (for consumption and net capital formation). At the beginning of the 1980's most of the countries of the region were in a situation where they had to continually achieve trade surpluses in order to compensate for the unfavorable developments in foreign exchange relations, and, most of all, to be able to reduce their foreign indebtedness. In many countries, including CSSR, the measures to restore the damaged external balance, primarily in the area of free currencies, became of singular importance. A natural outcome of this orientation was a slower growth of the consumed national income than that of the produced one (the dynamics of which, moreover, remained lower than originally planned), or in other words an absolute decline of domestic consumption.

As is evident from the data in Table 2, the consumed national income rose from 1981 to 1983 only in the Bulgarian People's Republic and USSR. Of course, even in Bulgaria domestic consumption since 1982 grew substantially more slowly than the produced national income (compare Table 1), while in USSR the lead-time of production over consumption was evident during all of the 1981-1983 period and can also be assumed for last year. In other countries, for which data are available, the consumed national income during 1981-1983 declined overall. It is necessary, however, to also note the turn in the development in the case of CSSR and the Polish People's Republic during 1983, which in case of the second of the mentioned countries is also confirmed by the data for last year. The sharp decline of the consumed national income in the German Democratic Republic in 1982, which had an impact on the overall results for all of the studied period, can be considered to be more of an exception.

This development, together with an economic policy aimed at reducing the growth of investments and at the realization of social programs in a situation, when the resources designated for domestic use, or their increments, declined as a result of the declining dynamics of economic growth and outflow of resources abroad, had a great impact on the structure of domestic consumption. As can be deduced from the data in Table 2, net capital formation in most instances grew less in 1981-1983, or in other words, declined more than the consumed national income. It can even be said, that net capital formation became a sort of remainder quantity, which was left after the need to balance losses caused by developments in foreign exchange relations, as well as the need to reduce the foreign debt and maintain or increase the attained level of personal and public services consumption, were satisfied. In accord with this strategy, we find on the basis of the data in Table 2 that the extent of net capital formation in 5 countries (exclusive of the Rumanian Socialist Republic, for which there are no data available) in the 1981-1983 period declined, and the share of consumption in the used national income increased. Only in USSR the net capital formation has not declined even once during the years mentioned, and on the whole it grew.

Table 2

		Tabulka 2				
		(1) Vývoj užitého národního důchodu, spotřeby a akumulace v evropských zemích RVHP <sup>1</sup>				
(2)		(3) v letech 1980—1984 (roční změny v %)				
Země	Ukazatel	1980	1981	1982	1983	1984
BLR (4)	UND	5,1	7,7	1,9	1,2	—
	S	3,6	5,3	3,7	2,9	—
	A	9,5	14,8	— 3,3	— 3,6	—
ČSSR (5)	UND	2,7	— 3,4	— 1,6	0,7	—
	S	1,0	2,6	— 1,1	2,7	2,4 <sup>2</sup>
	A	8,2	—21,7	— 3,6	— 7,2	—
MLR (6)	UND	— 1,7	0,7	— 1,1	— 2,7	0,0
	S	0,2	3,0	1,4	0,6	—
	A	— 8,7	— 8,6	—12,4	—20,4	—8—9
NDR (7)	UND	5,0	1,1	— 3,2	0,4	—
	S	2,9	2,7	1,3	0,9	—
	A	12,4	— 3,3	—20,1	— 1,9	—
PLR (8)	UND	— 6,0	—10,5	—10,5	5,4	5,0
	S	2,1	— 4,6	—11,5	5,6	—
	A	—29,6	—27,6	— 6,6	4,9	—
SSSR (9)	UND	3,9	3,2	3,6	3,6	2,6
	S	6,0	4,0	1,2	2,9	—
	A	— 0,6	0,9	11,0	5,8	—
(10)						

Přzn.: UND — užitý národní důchod; S — spotřeba; A — akumulace; <sup>1</sup> Bez RSR, která příslušné údaje neuveřejňuje; <sup>2</sup> Odhad Hospodářské komise OSN pro Evropu.

(11) Pramen: Statisticheskij ježegodnik stran-členov SEV 1984. Finansy i statistika, Moskva 1984; Economic Survey of Europe in 1984—1985. ECE, Geneva 1985.

KEY:

(1) Development of Consumed National Income, Consumption and Net Capital Formation in European CEMA Countries<sup>1</sup> in 1980-1984 (annual changes in percent)

- (2) Countries
- (3) Indicator
- (4) Bulgarian People's Republic
- (5) CSSR
- (6) Hungarian People's Republic
- (7) German Democratic Republic
- (8) Polish People's Republic
- (9) USSR
- (10) Note: UND--consumed national income; S--consumption; A--net Capital Formation; <sup>1</sup>not including the Rumanian Socialist Republic, which does not make the pertinent data public; <sup>2</sup>Estimate of the U.N. Economic Commission for Europe.
- (11) Source: Statisticheskij jezegodnik stran-clenov SEV 1984. Financy a Statistika, Moscow 1984; Economic Survey of Europe in 1984-1985. ECE, Geneva, 1985.

### Development of Investments

Until the end of the 1970's, the economic development of the European CEMA countries was linked with a high degree of investments (the share of gross investments in the produced national income). In the 5-year 1976-1980 period, investments still grew faster than the national income. This type of economic growth, beside the disproportionalities that it endangers, and the considerable demands on the supply of energy, raw materials and workforce it produces, also restricts the growth of the standard of living and increases tensions in external economic relations. For that reason, the 5-year plans for 1981-1985 were marked by a new approach to capital investment: planned increments to investments as well as the extent of investments were generally reduced. Thus on one hand the restrictions necessitated by the smaller increment of the consumed national income were observed, on the other hand certain chronic shortcomings of capital investment were eliminated. As is evident in Table 3, the original plans for reducing the investment intensiveness of the economic growth in 1981-1984 were not only fulfilled, but in many cases even exceeded.

Table 3

(1) Vývoj investic v evropských zemích RVHP v letech 1976-1985 (průměrné a roční změny v %)							
(2) Země (oblast)	1976-80 <sup>1</sup>	1981-85 <sup>1</sup> Plán	1981	1982	1983	1984	1985 Plán (3)
(4) BLR	4,1	0,9	10,5	3,6	0,7	—	6,1 <sup>2</sup>
ČSSR (5)	4,1	-1,7	-4,6	-2,3	0,6	1,5 <sup>3</sup>	2,0
(6) MLR NDR (7)	3,8	—	-4,3	-1,6	-3,7	-(6-7)	1,1
(8) PLR RSR (9)	4,7	1,1	2,8	-5,1	— <sup>3</sup>	— <sup>3</sup>	— <sup>3</sup>
(10) Šest zemí	-0,4	—	-22,4	-12,1	9,4	8,0	—
celkem	9,7	4,4	-7,1	-3,1	2,5	6,1	8,3
SSSR (11)	3,9	1,5	3,8	3,5	5,8	2,0	3,4
Evropské země							
(12) RVHP celkem	4,0	1,5 <sup>4</sup>	0,4	1,3	4,7	2,4	3,4

(13) Pozn.: <sup>1</sup> Na základě geometrického průměru; <sup>2</sup> V běžných cenách; <sup>3</sup> Odhad Hospodářské komise OSN pro Evropu; <sup>4</sup> Bez PLR.

Pramen: Národní statistiky, statistické zprávy o ročních výsledcích, plány; Economic Survey of Europe in 1984-1985, ECE, Geneva 1985.

KEY:

- (1) Development of Investments in European CEMA Countries in 1976-1985 (average and annual changes in percent)
- (2) Countries (region)
- (3) Plan
- (4) Bulgarian People's Republic
- (5) CSSR
- (6) Hungarian People's Republic
- (7) German Democratic Republic
- (8) Polish People's Republic
- (9) Rumanian Socialist Republic
- (10) 6 countries as a whole
- (11) USSR
- (12) European CEMA countries as a whole
- (13) Note: <sup>1</sup>On the basis of a geometric average; <sup>2</sup>in current prices; <sup>3</sup>Estimate of the U.N. Economic Commission for Europe; <sup>4</sup>not including the Polish People's Republic
- (14) Source: National Statistics, statistical data on annual results, plans; Economic Survey of Europe in 1984-1985, ECE, Geneva, 1985.

Given the small increments, and for the most part following the absolute decline in 1981-1982, the dynamics of capital investment increased during the next 2 years. The differences among the countries being considerable, the increment of investments in the region in 1984 amounted to 2.4 percent; compared to the previous year (increment of 4.7 percent), it was almost half as low. This result was due primarily to the decline of the increment of investments in the Soviet Union, whereas in the other 6 countries the volume of investment increased almost twofold. Even in this group of countries, however, there are considerable differences. A great portion of the increment of investments in the group of 6 countries belongs to the Polish People's Republic; after the resumption of investment activities in the 2 previous years, the Polish People's Republic thus reached the level corresponding to 2/3 of that of the last pre-crisis year, 1978. Investments also increased in the Rumanian Socialist Republic. In contrast, in the 4 remaining countries the increment to investments was either minimal (CSSR, German Democratic Republic, Bulgarian People's Republic), or even continued in its planned decline (Hungarian People's Republic). The outcome of this development was the decline in the extent of investments (except the Polish People's Republic), which in most instances fell below the level anticipated by the 5-year plan.

The prospect for the development of investments in the European CEMA countries in 1985 can be judged on the basis of a gradual restoration of higher dynamics of growth. In the group of these countries as a whole investments should increase by 3.4 percent, while in 4 countries (CSSR, German

Democratic Republic, Hungarian People's Republic and Polish People's Republic) the planned development of investments fluctuates between 0 to 2 percent. Last year's results ought to create conditions for increasing the rate of investments in the next 5-year period.

The slowdown in investment activities, which is a component of an overall shift toward intensification of the economy, has not fulfilled its part thus far. This concerns mainly the reduction in the number of unfinished construction, and an increase of the share of machinery and equipment (in contrast to the share of construction activity) in the total investment costs. In the 1981-1983 period, in comparison with the last 5-year plan, only the Bulgarian People's Republic, and to a lesser degree also the German Democratic Republic, succeeded in increasing the share of machinery and equipment in the investment costs. In the case of CSSR, USSR, Hungarian People's Republic and Rumanian Socialist Republic, their share changed only imperceptibly or declined, and in the Polish People's Republic the decline was unusually large. The fact that the value of this indicator mostly did not change or that it even declined, proves that either the number of newly started constructions was higher, or, which is more likely, the number of finished construction was lower than was anticipated by the 5-year plan. We can dismiss the first supposition, because investment activity between 1981-1984 has been mostly below the level of the tasks of the 5-year plan. It is therefore necessary to look for the causes most likely in the difficulties of finishing the constructions that were started, regardless of how those difficulties came about (for example, late deliveries of machinery and equipment, restrictions on imports, etc.).

Since the beginning of the 1980's, there has been a general decline in the amount of investments in the European CEMA countries, which was necessitated by the need to adapt to changed external conditions. An accompanying feature of this process are, of course, also the obsolete and worn out production capacities, to which attests the small number of liquidations of capital assets and an unfavorable development in their age structure. Moreover, the decline in the amount of investments did not lead in any of the countries to a decline in unfinished construction.

This situation, together with the decline of investment activity, creates certain problems for future economic policy and for the realization of deeper structural shifts. A low rate of investments restricts the leeway for structural shifts, which are difficult to put in effect in a situation where investments are stagnating or even declining.

From the plans for 1985 we can deduce that the leading economic agencies of the European CEMA countries are aware of the nature of the problems in the investment area. We can observe, albeit only to a small degree thus far, a rising trend in the growth of investments. Overcoming the investment cutbacks and restoring the dynamics of investment obviously will be one of the central objectives of the 5-year plans for 1986-1990.

## Development of the Standard of Living

Real income, which is the most common indicator of the standard of living, grew overall in all the European CEMA countries, despite certain fluctuations in individual years (1981-1984). In comparing its dynamics in previous years (1981-1984), however, its increments were smaller. Such development, however, has been already built into the 5-year plans for the first half of the 1980's. After a period of low rates of growth of real personal income, its dynamics increased beginning in 1983 in CSSR, Polish People's Republic and USSR. Relatively most stable was the development of real personal income in the Bulgarian People's Republic and German Democratic Republic. In 1983-1984 we can observe in most of the countries an increase in the increments of income, and thus also of personal consumption. This is the result of an increased dynamics of the national income with a corresponding growth of the monetary income, of a slowing down of the increases of retail prices of goods and also of the increased turnover in retail trade. At the same time, public consumption in most countries grew faster than wages.

The development of real wages progressed roughly at the same rate as the development of real income; their increments, however, were smaller. Real personal income includes, as is well known, also retirement pay from the public services fund, which has been increased faster than real wages. Fluctuations in the growth of real wages in CSSR and the Polish People's Republic in 1982 were overcome in the following year. The decline in real wages in the Hungarian People's Republic, which began in 1982, continued in both of the following years, in the Rumanian Socialist Republic it took place in 1982 and 1983. The increments of real wages in the Bulgarian Peoples' Republic have had a downward trend.

The tasks concerning growth of real personal income in 1985 have been made public only in some countries. Certain acceleration of economic growth, which is being planned for this year, will create conditions for the increment of real income in all countries (not including the Bulgarian People's Republic) to be larger than the average for the past 4 years, and larger than the average planned increment for the 5-year period.

Retail trade turnover grew in the past year in most of the countries of the region faster than in previous years, and basically conformed to the planned tasks (by 4.6 percent in the Bulgarian People's Republic, 2.2 percent in CSSR, 4.1 percent in the German Democratic Republic, 0.2 percent in the Hungarian People's Republic, 6 percent in the Polish People's Republic, 4.8 percent in the Rumanian Socialist Republic and 4.2 percent in USSR). In contrast, in the initial period of the current 5-year plans its increments were smaller in all instances. An absolute decline of the retail trade turn-over in CSSR and the Rumanian People's Republic in 1982, and in the Polish People's Republic in 1981 and 1982, was a reflection of the changes in the domestic production and limited imports of consumer goods. The year 1983 was a turning point in this respect; the supply of food-stuffs and industrial products improved in most of the countries. In the Polish People's Republic, with the exception of meat and meat products, the ration coupon system was abolished.

## Development in the Area of External Relations

The developments in the area of external economic relations had, during all of the first half of the 1980's, a far greater impact on the course of economic processes of the European CEMA countries than ever before in the past. This concerned primarily the group of 6 countries, whose foreign exchange relations worsened in the transition between the 1970's and 1980's. This was caused primarily by the fact that on the basis of creating contractual prices an acceleration of price increases of inputs of energy and other raw materials occurred, thus creating far greater demands on the export production of these countries. The situation in the Soviet Union was substantially different, because that country is a prime exporter of crude oil.

The pressures of the external economic environment increased, contrary to original expectations at the beginning of this decade. An unusually prolonged economic crisis in the capitalist world, which exacerbated the protectionist tendencies in world trade, made selling on shrinking world markets more difficult, and at the same time revealed how little prepared the socialist countries were to face the stiffer competition. The increase in interest rates on the international credit markets and the increased value of the dollar also increased the costs of debt servicing, and in the intense international situation the task of reducing foreign indebtedness to Western banks and governments became one of the priorities of the economic policies of most socialist countries.

The European CEMA countries reacted to this newly arisen situation by requiring a faster growth of exports over imports, strengthening the importance of intra-regional trade, orientation toward achieving a trade surplus and surplus of payments vis a vis the capitalist countries, and the groups of 6 countries also by efforts to reduce the trade deficit with the Soviet Union.

Even though the overall dynamics of foreign trade turnover of the European CEMA countries declined considerably in comparison with the 1970's, their economic policy achieved extraordinary successes in that sphere. In an era marked by stagnation and decline in foreign trade, the 6 CEMA countries achieved in 1982, for the first time in the whole decade, a trade surplus in relation to the nonsocialist countries, which was recorded also in the next 2 years.

The combined balance of foreign trade of the European group of CEMA countries as a whole finished last year with a surplus of roughly \$19 billion. The active balance of trade with advanced capitalist countries reached approximately \$9 billion and in comparison with the previous year practically doubled; USSR and the group of the 6 countries shared in it roughly by an equal amount. What is also remarkable is the fact that the increment of the surplus in the past year was again (in contrast to 1982) achieved exclusively in trade with advanced capitalist countries, because trade surplus with developing countries declined as a result of payment difficulties of those countries. It is an achievement all the more remarkable because the foreign exchange relations of the six CEMA countries with the capitalist countries

have been showing a downward trend in the 1980's. The trade deficit of this group in relation to USSR, after declining in 1982 and 1983, again increased slightly last year.

This important turnaround in the development of external economic relations of the 6 countries enabled them since 1982 to reduce their indebtedness in the free currencies; according to the estimate of the U.N. Economic Commission for Europe, the net debt of this group declined by a further \$6 billion.

Even though the past 2 years saw a certain revitalization of the trade turn-over with capitalist countries, the change in the conditions of the world trade caused a shift in the territorial orientation of the foreign trade of CEMA countries; the share of intra-regional trade in the framework of all of CEMA grew to 60 percent last year.

The orientation toward renewing the external balance of the six CEMA countries brought undeniable results in the course of the current 5-year plans. However, we must not overlook the fact, that--even though it is essential--it was not without consequences for the internal economic development and ensuing conditions of the next 5-year plans of individual countries. The shift of resources to foreign countries meant also smaller increments of consumed national income, limited capital investment, and small increments of consumption.

An important milestone in the economic development of the whole economic community of socialist countries was the conference on economic matters last year of CEMA countries at the highest level, which showed a clear way for the future development of socialist economic integration.

The main thing at stake today for sister countries and their integrated groupings is the intensification of economic development. This problem, moreover, has to be resolved in a very specific time frame, which is marked--unfortunately--by heightened international tensions, which are understandable reflected also in international economic relations. The task of broadening mutual cooperation within the CEMA framework and increasing its effectiveness, which naturally depends on the achieved level of the work force of member countries and their goals, thus become more urgent. The socialist countries must quickly, and in adequate volume, ensure out of their own resources (mostly on the basis of intra-branch and intra-departmental production and research and development specialization, cooperation, and coordination of investments) also the availability of those products, particularly machinery and equipment, the need for which they could in more favorable international conditions satisfy to a certain degree through relations with advanced capitalist countries. This does not mean autarky, but economic invulnerability.

If it were possible to reduce the tasks given at last year's conference at the highest level concerning the transition to an intensive economic development into a single one, then it would be a close interconnecting of the production technological base with research and development and capital investment. A key role in this respect should be given to a long-term comprehensive program of research and development which is being readied, following the resolution of the economic conference.

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ECONOMY

INTERNATIONAL AFFAIRS

CEMA MEMBERS PROVIDE TECHNOLOGICAL AID TO SEVERAL LDC'S

East Berlin AUSSENWIRTSCHAFT in German Vol 14 No 4, 22 Jan 86 pp 1-2

[Article: "Support of Industrialization in the Developing Countries"]

[Text] The CEMA countries were cooperating with 34 developing countries at the start of the 1960's, 62 in 1970 and more than 100 at the beginning of 1985. The total volume of economic and technical support increased by a factor of more than 20 during these years. As a result of the cooperation, about 3,900 industrial and other facilities were built and put into operation, including about 2,000 in Asian countries, more than 1,700 in Africa, and about 200 in Latin America. More than 1,000 projects are now under construction or in preparation in accordance with the agreements and contracts that have been entered into.

The economic and technical cooperation with the developing countries is becoming more and more long-term and complex in nature. Corresponding long-term programs or agreements exist, among others, between:

- Bulgaria and Libya as well as Mozambique,
- Hungary and Nigeria,
- the GDR and Angola, Algeria, Libya and Nigeria,
- Romania and Angola, Algeria, Egypt, Libya and Mozambique,
- the USSR and Angola, Algeria, Libya, Morocco, India and Ethiopia,
- the CSSR and Nigeria, Libya, Syria and Egypt.

Technical support is rendered above all in the development of national industry, the power economy and the transport system, the development of mineral resources, in the construction of agricultural and other projects, and in the training of key personnel.

The production capacities that have been developed with the support of the CEMA countries make possible the annual production or extraction of:

- more than 30 million tons of steel,
- 500,000 tons of aluminium,
- more than 70 million tons of petroleum,
- more than 50 million tons of petroleum products,
- 30 billion cubic meters of natural gas,
- 50 million tons of coal,
- about 15 million tons of cement.

The installed power plant capacity in operation exceeds 30 million kilowatts.

The enterprises hold key positions in the developing countries. In India, for example, they account for about 40 percent of the total production of ferrous metallurgy, 60 percent of the extraction and 50 percent of the processing of petroleum, 15 percent of the production of electric power, and a significant part of the production of heavy machine building; in Syria, 100 percent of the production and refining of petroleum as well as the production of nitrogen fertilizers and more than 80 percent of the production of electric power; in Iran and Egypt, 70 or 95 percent, respectively, of the production of ferrous metallurgy; and 60, 50, or 60 percent, of the production of electric power in Afghanistan, Egypt and Iraq, respectively.

#### Geological Exploration and Development

The CEMA countries provide support in the large-scale geological exploration and development of natural riches in Algeria, Angola, Afghanistan, Bangladesh, Guinea, Iraq, India, Morocco, Mozambique, Nigeria, Syria, the Congo, Pakistan, Sri Lanka and Ethiopia, among others. At the same time, national cadres are trained and the scientific base is established, thus creating the conditions for the exploration with their own personnel. Specialists from CEMA countries explored

- petroleum and natural gas deposits in Egypt, Afghanistan, Bangladesh, India and Syria, among other places,
- rock phosphate deposits in Egypt, Morocco and Syria,
- bauxite occurrences in Guinea and Guinea-Bissau,
- polymetal deposits in the Congo, Egypt, Algeria and Afghanistan.

The deposits of various mineral resources explored primarily with the participation of geologists from Bulgaria, Hungary, Romania and the USSR formed the basis for the development of such important branches of the

national economies of the developing countries as ferrous and nonferrous metallurgy and the petrochemical, cement, glass and building materials industries. Thus Soviet geologists explored phosphate rock deposits in Syria amounting to 1 billion tons, including three large deposits in the area of Palmyra. Bulgaria, Poland and Romania participated in the construction of mining enterprises. The 285-kilometer railroad line from Palmyra (phosphate mine) to Homs (superphosphate works) to the port of Tartus was built with the help of the Soviet Union.

#### Ferrous and Nonferrous Metallurgy

Among the large enterprises in ferrous metallurgy built with the assistance of the CEMA countries are the metallurgical plants

--Bokaro and Bhilai (each with an annual capacity of 4 millions tons of steel) in India (partner: USSR),

--El-Hadjar (2 million tons of steel) in Algeria (USSR),

--Heluan (1.5 million tons of steel) in Egypt (USSR).

At the present time, the following metallurgical plants are under construction or are being expanded:

--Vishakhapatnam (3 million tons of steel) in India (USSR),

--Adshaokuta (1.3 million tons of steel) in Nigeria (USSR, Hungary, GDR, CSSR),

--Isfahan (expansion from 0.5 million tons to 1.9 million tons of steel) in Iran (USSR, Bulgaria, CSSR).

In the area of nonferrous metallurgy, the following works, among others, were built:

--Hag-Hammadi (166,000 tons of aluminum) in Egypt (USSR),

--Korba (100,000 tons of aluminum and 200,000 tons of argillaceous earth) in India (USSR and Hungary), and

--in Algeria, the Ismail Enterprise (317,000 tons of mercury) and a lead and zinc enrichment factory with an ore-processing capacity of 680,000 tons (USSR) as well as the Kerset Joseph Mining and Enrichment Combine with a processing capacity of 100,000 tons of lead-zinc-ore (Bulgaria).

#### Power Economy

To date more than 1,000 projects for the production of power and for the power infrastructure have been built in Algeria, Afghanistan, Egypt, Argentina, Bangladesh, Brazil, India, Iran, Iraq, Libya, Morocco and Peru with the

support of the CEMA countries. Among the projects are

--the Assuan Hydroelectric Power Complex in Egypt, covering more than 50 percent of the country's requirements for electric power,

--the hydroelectric power complex on the Euphrates in Syria (800 megawatts), the largest project of its type in the Middle East, covering about 60 percent of Syria's requirements for electric power and making possible the irrigation of more than 600,000 hectares of land,

--the Nasirya Thermal Electric Power Station (840 megawatts) and the Dukan Hydroelectric Power Plant in Iraq.

Currently under construction, among others, are the Isfahan Thermal Electric Power Station (800 megawatts) in Iran with the assistance of the USSR, Hungary and Poland; the Ramin Thermal Electric Power Station (1,260 megawatts), also in Iran, with the support of the USSR; the Vindhya Thermal Electric Power Station (1,260 megawatts) in India with the support of the USSR; and the Melkana Wakana Hydroelectric Power Complex (150 megawatts) in Ethiopia with the assistance of the USSR and the CSSR.

#### Petroleum and the Chemical Industry

Petroleum processing enterprises came into being with the assistance of

--the USSR in Egypt (Suez and Alexandria with a processing capacity of 1 million tons annually each), in India (Koyjala and Barauni with 3 million tons each and Matura with 6 million tons), and in Ethiopia (Assab, 625,000 tons),

--the CSSR in Iraq (Basra and Bejri, about 10 million tons) and in Syria (Homs, 5.2 million tons),

--Romania in Syria (Banias, 6 million tons) and in India (Gauhati, 0.75 million tons and Haldin, 2.5 million tons).

Enterprises in the chemical industry primarily include the production of fertilizers, sulfuric acid, truck tires and textile dyestuffs.

#### Metalworking Industry

The development of the metalworking industry is becoming increasingly important in the developing countries. Heretofore more than 200 enterprises have come into being with the assistance of the CEMA countries, including in Afghanistan, Algeria, Egypt, Bangladesh, India, Iraq and Iran. The countries themselves are thus often in a position to equip certain new facilities in different branches, to reconstruct enterprises, and to export machine building products.

Cooperation in the development of the metalworking industry often also includes the development of different forms of collaboration, such as

international specialization and cooperation in production and the effective utilization of capacities. Thus the machine factories constructed in India with Soviet support--the plant for heavy machine building in Ranchi and the plant for ore mining equipment in Durgapur--delivered 7,400 tons of equipment to the USSR last year.

#### Personnel Training

Occupational training centers established with the support of the CEMA countries in Algeria, Egypt, Syria, Iran, Iraq and Afghanistan, among other places, have become important installations for the provision of personnel for the key branches of the national economies. A total of about 160 such centers have been developed and more than 50 are under construction.

The number of graduates of teaching institutions established with the assistance of CEMA countries is increasing. These institutions include the polytechnic institutes in Kabul (Afghanistan), Bachr-Dar (Ethiopia), Port Harcourt (Nigeria), the technological institutes in Rangoon (Burma) and Bombay (India), and the Bourmeredes Petroleum and Gas Institute (Algeria).

The number of students from developing countries at the universities and technical schools of CEMA countries is increasing from year to year. More than 100,000 of them have completed their education and about 90,000 from 121 countries are currently being trained.

Of special importance is the CEMA scholarship fund. In the 10 years of its existence, about 5,500 scholarship holders from 60 developing countries have received an education in CEMA countries and more than 1,700 of them have completed their studies.

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To an increasing extent, the developing countries are paying for the support provided to them by CEMA countries with products from the enterprises developed with their help: petroleum, natural gas, bauxite, argillaceous earth, ferrous and nonferrous metals, yarns, canned goods, chemical fertilizers, and some types of machine building products. These shipments make up a significant portion of the total imports of the CEMA countries.

In the future as well, the CEMA countries will continue to expand cooperation with developing countries, whereby they are proceeding on the assumption that it will contribute to the development of the national economy and to the strengthening of the economic independence of these countries as well as to the development of mutually advantageous economic relations with them. This was affirmed by the highest representatives of the CEMA countries at their 1984 summit meeting in Moscow.

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ECONOMY

BULGARIA

ROLE OF SMALL HYDROELECTRIC STATIONS ASSESSED POSITIVELY

Sofia NARODNA MLADEZH in Bulgarian 23 Jan 86 p 2

[Article by Lyudmil Paunovski: "Great Problems of Small Hydroelectric Stations --Opportunities for Tomorrow; Question Is Whether General Agreement Will Result in Decisive Change"]

[Text] It was normal that we should first address to the State Planning Committee our inquiry into the departments interested in the full utilization of water power by small hydroelectric stations (HES's). Our meeting with the director of the committee's Energy Directorate, Kiril Statev, was encouraging. In his opinion, if the Energy and Machine-Building Ministries accomplish what is targeted in the already-cited Order No 216 of the State Planning Committee, matters will unquestionably move forward. The desire is that this should take place as soon as possible but the Ministry of Energy is obliged to cope in time with the investigation of the country's microhydroelectric potential and to prioritize the proposed projects according to effectiveness. The next assignment of the Energoproekt Institute is to develop systems for the reliable operation of small HES's.

On the basis of the opportunities brought to light, the minister of machine building must establish the manufacture of hydraulic turbines in varying series production and type sizes--something that will not be easy, for the ministry has neglected this activity for at least 10 years. In final analysis, the small-HES problem will be solved when the necessary material and standards base is created. Such projects must be the concern predominantly of individual managers rather than that of the state! A modern-thinking manager would hardly refuse a hydraulic turbine that does not require constant supervision and great capital investment. It is enough if it costs less than electric power paid for at state prices and obtained centrally. However, the present methods of assessing the effectiveness of small HES's like these are unquestionably antiquated and must be updated.

I had a meeting at the Ministry of Energy with the director of the State Expert Technical and Economic Council Marko Ezekiev. He holds categorically that practical realities will force us to give thought to the use of small HES's even if on a national scale the power supply is not significantly improved thereby. The planned state of readiness obtains for the small HES's targeted during the Ninth 5-Year Plan. There are not a lot, but there are just as many opportunities. On the other hand, great prospects are opening up for units of NAPS [National Agro-industrial Union]. The use of water from irrigation microreservoirs would solve,

for example, the power supply of farms and sheepfolds. Enterprises, obshtina people's councils, even individual town councils must join in the search for reserves. That is to say, in other words, financial concern must be two-way. The ministry will perform its duties according to the order of the State Planning Committee and wait for the Ministry of Machine Building to present documents for a range of small hydraulic turbines. Low-cost designs that will work reliably under any conditions will be sought. At first, those such as turbines and pumps may be used. Instead of drawing water, a stream of water under pressure of gravity will pass through them and thus they will produce electricity. Research at the Pump Institute in Vidin has shown good results. With both the turbines and pumps once adjusted and installed, the assistance of the specialists of the enterprises or APK's [agroindustrial complexes] in question will of course be needed, with the result that a front opens up for the work of the TNTM [Movement for Youth Technical and Scientific Creativity] clubs.

They are not waiting at the Ministry of Machine Building, either. Already they have presented to the Ministry of Energy documentation with developed plans, available at the moment, for small hydraulic turbines. Much is expected, according to the chief specialist at the Development of Machine-Building Products Chief Directorate, Aleksandur Betov, from the hydroturbine subsidiary, which soon will become stronger. Its conversion into the Heavy Machine-Building Investment Institute will doubtless have a favorable effect. The subsidiary still has experience and abundant information. With assignments etc. clarified, specific teams of the institute would join in the development of future plans. And here, unquestionably, there is room for a contribution by the participants in the TNTM movement. On the completion of the inspection of the microhydroelectric potential of Northern Bulgaria, relevant requisitions are bound to come from the Ministry of Energy.

Not a single one of these will be denied. True, there is greater readiness now to produce small and mini-HES's, while micro-HES's are still in their beginning. For all that, the ministry is ready alone to finance the development of a range of micro-HES's since it is clear that these turbines must first appear in the market and only then will the customer be interested in them. At first, for each of the versions (small, mini- or micro-HES) at least a dozen type sizes will have to be made. The first such examples will be ready even before the end of this year, and in 1987 the entire range of small HES's will appear.

We completed our tour at the National Water Council of the Council of Ministers. Our meeting with Chief Specialist Aleksandur Pekov was frank. Yes, we lag considerably behind in the rational use of water power. It is already world practice wherever there is a waterfall, albeit small, to make use of the power automatically within the given parameters. There is a like attitude in our country too, but the relevant base is lacking. If small, easily operable hydraulic turbines are produced that will not be capricious, will not be dependent on the season or require constant attendant personnel, they will inevitably be indispensable. Of course, first place in the Ministry of Energy's program goes to the comparatively larger capacities already built but not in use; then come the projects that are going to be built, and ranking right at the bottom in importance are the so-called microhydroelectric stations.

We have reason to be satisfied with this inspection that we have made. For not a single department questioned the necessity of the accelerated development and the putting into operation of small HES's. Opinion is unanimous. Small HES's are not a decisive factor for stabilizing our power system. But they are already a necessary condition for the functioning of any such up-to-date system. And in this sense the predominant viewpoint is that the economic edicts now in force [word illegible] regulating the effectiveness of water-power facilities are not consistent with the new factors of our development.

This conclusion, as well as the difficulties cited in our published articles, caution us still against excessive optimism. The possible 500 megawatts of capacity from small HES's are not to be disregarded, but how many of these are from mini- and micro-HES's? It must be understood now that there can no longer be persons who are financially unconcerned or who have just "forgotten" that water-power kilowatts are being lost in their territory. Only then can we be sure that we have taken the already-beaten world path towards the complete utilization of water power.

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ECONOMY

BULGARIA

MINISTER OF METALLURGY DWELLS ON PRODUCTION, FUTURE PLANS

Sofia IKONOMICHESKI ZHIVOT in Bulgarian 5 Feb 86 pp 1, 3

[Article by Minister Toncho Chakurov: "Metallurgy up to Qualitatively New Level"]

[Text] During the years of the Eighth 5-Year Plan metallurgy has developed in keeping with the main directions in the building of the material and technical base of a mature socialist society set by the 12th BCP Congress. During this period the process of reorganizing metallurgical production along intensive lines began.

Despite certain difficulties, in 1985 there were produced 1,713,200 tons of cast iron, 2,847,600 tons of steel and 3,398,000 tons of rolled ferrous metals, the increase over 1984 being respectively 8.5 percent, 2.0 percent and 3.3 percent. Production of rolled products per capita amounted to 377 kg, which is up to the level of the developed countries in the world.

Satisfaction of the country's needs of ferrous metals through our own production amounted to 66 percent, and through trade with the socialist countries this percentage rose to 78. Nonferrous metallurgy now meet fully the national economy's needs of lead, zinc, copper, rolled aluminum products, semiconductor alloys and a wide range of chemicals. The product mix has been expanded and the quality of metal products rose. The production of a number of high-grade carbon low-alloy steels and nonferrous-metal alloys was mastered.

The introduction of a number of new technologies such as out-of-furnace inert-gas or vacuum metalworking, etc., was started. The adoption of ion-exchange technology enabled us to start the production of molybdenum and rhenium products from substandard concentrates.

During the Eighth 5-Year Plan a number of new mining-and-concentration and metallurgical capacities came on stream.

A number of social problems of the sector's workforces were also solved. Programs for protection of the environment in the regions of the metallurgical combines were formulated and implemented.

Despite what has been achieved, our metallurgy has still fallen short in its duty to the national economy not only in respect of satisfying the needs for

metallurgical products, but also in respect of their quality. For example, we are now producing about 80 makes of steel and 2500 section sizes of ferrous-metal rolled stock and products, with high-grade steels constituting barely 28 percent in 1985. But machine-building needs alone are far greater, with half of these for high-grade steels.

This year's plan targets the production of some new ferrous-metal products, the more important of which include:

--various makes of hot-rolled stainless steel. Production thereof will be brought on stream at the L. Brezhnev Economic Metallurgical Combine and the steel will be destined for the machine-building and the chemical industries;

--for the construction industry the L. Brezhnev SMK [Economic Metallurgical Combine] will produce cold-rolled plastic-coated sheet using Bulgarian varnishes, and for canning industry needs tin plate with a thinner tin plating;

--at the Lenin SMK certain kinds of low-alloy structural steel will be produced for the machine-building industry, while for the needs of the mining industry it will produce special corrugated sheet for mine reinforcement. Besides, additional quantities of wires, cables and welding wires fabricated from the new makes of steel will be delivered to the machine-building industry.

Nonferrous metallurgy will also start up and introduce a number of products in 1986--new kinds of alloys, rolled products and tubes made of heavy and light ferrous metals, semiconductor materials, solders, etc.

However, the degree of final processing of metal products and their quality are still unsatisfactory. This is one of the reasons for the great overconsumption of metal, for overstocking and overestimation of metal requisitions, and for large and unwarranted losses.

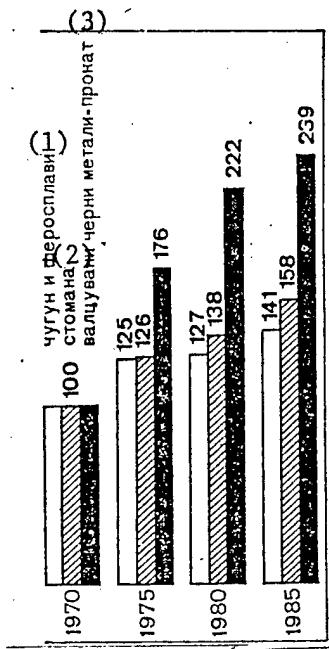
The decisions of the February (1985) Plenum of the BCP Central Committee, as well as Comrade Todor Zhivkov's personal recommendations to metallurgists, require of workforces, specialists and managers that they launch a wide- and large-scale effort to raise Bulgarian metallurgy to a qualitatively new level.

The main task now is sharply to improve the structure and quality of output, achieving the criteria of the metallurgically advanced countries in respect of labor productivity, consumption of materials, physicomechanical properties, and value per unit of metal output. On this basis it is possible with a comparatively lower production increase to assure maximum satisfaction of the country's metal needs, and more especially machine building's metal needs not only in respect of quality, but also in respect of mix.

Ferrous metallurgy must do this in the following ways:

--by setting up flexible small enterprises in- and outside existing metallurgical combines which will provide for machine-building needs a wider mix of rolled products with the maximum degree of forming;

PRODUCTION OF BASIC FERROUS-METALLURGY PRODUCTS, IN KIND



Key:

1. Cast iron and ferroalloys
2. Steel
3. Rolled ferrous-metal products

--by reconstructing and modernizing existing rolling capacities, upgrading their degree of automation, and improving finish operations in order to increase labor productivity and the quality of rolled products;

--by raising the technical and economic indicators of extraction capacities through the reconstruction, modernization and automation of blast-fernace, converter and electric-steel production;

--by general employment of the continuous steel casting method;

--mastery of new makes of high-grade steels, etc.

Nonferrous metallurgy must raise quality and efficiency on the basis of the following:

--by speedily putting into operation new capacities and ensuring their coming on stream stage by stage so as to realize maximum effect from the capital investment taken down;

--by modernizing and reconstructing existing capacities so as to attain world-class technical and economic indicators for metallurgical plants and by upgrading the degree of processing of metal products;

--by increasing the number of metals extracted by comprehensive and intensive processing of complex ores;

--by upgrading the degree of extraction of basic and accompanying components, at the same time reducing the consumption of energy sources through the employment of new technologies and automation of processes, etc.

According to targeted development, by 1990 ferrous metallurgy will produce about 12,000 makes of section sizes [markoprofilorazmeri] of rolled products and ferrous-metal items. In nonferrous metallurgy the number of kinds of extracted metals will rise from 12 to 16, and the number of makes of section sizes will increase by more than 3000.

Our cooperation with the USSR and other CEMA-member countries in the sphere of production and capital investment during the Ninth 5-Year Plan will be aimed at the intensification of specialization and the efficient exchange of metal products, at the updating, reconstruction and modernization of metallurgical capacities.

Our major metallurgical plants were constructed more than 20 years ago. Their capital assets are technically and physically obsolete. Whereas the world during the energy crisis of the 1970's set decisively about bringing metallurgical capacities up to date, we must frankly confess that this process has lagged in our country. What is needed is speedy and resolute renovation in order for us to retain and gain new positions in the international socialist division of labor as regards the production of high-grade metal output with high consumer value--cold-rolled sheet, tin plate, plated sheet, galvanized pipes, etc.

With a view to wide-scale application of the achievements of technical progress, it will boldly proceed to establish more efficient and flexible forms of integration with scientific and scientific-production organizations in our country and abroad.

In the next few years the links between metallurgy and machine building will expand and intensify. I refer to the interpenetration of activities in the two sectors. Machine building already has at its disposal considerable capacities for the production of high-grade rolled-steel products at the Radomir SKTM [not further identified; possibly Stopanski Kombinat za Tezhko Mashinostroene, Economic Combine for Heavy Machine Building] and the Bl. Popov NPK [Scientific Production Combine] in Pernik. The production programs in metallurgy and in machine building must be combined so as to effect the optimum use of capacities and the maximum satisfaction of needs.

At the same time, the program for a sharp increase in the production of high-grade metal and of metal products with a high degree of final processing requires specific collaboration in changing design documentation, standardization documents and consumption standards within the machine-building industry. The aim is to reduce the metal-intensiveness of the machinery and equipment they produce.

On the other hand, machine building must engage more actively in the production of mining and metallurgical equipment and spare parts, of systems for the automation of metallurgical processes. In this way our ferrous metallurgy will have a sound supply system for technical renovation and reliable operation.

In conclusion, I want to observe that we have a formulated specific program for the development of ferrous and nonferrous metallurgy during the Ninth 5-Year Plan and up to the year 2000. We are aware that the tasks in the first-rate reorganization of Bulgarian metallurgy are complex, comprehensive and difficult to carry out. It is no accident that the party and Comrade Todor Zhivkov personally are paying great attention to the metallurgy problem. Therefore, only strict fulfillment of the program within the projected time limits can guarantee successful execution of the assigned tasks.

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POLITICS

CZECHOSLOVAKIA

NATURE PROTECTION IN BOHEMIA

Prague RUDE PRAVO in Czech 22 Jan 86 p 4

[Interview with Eng Kanka and Eng Polak by Zdenek Zuntych: "New Regional Nature Reserves in southern Bohemia?"]

[Text] For the time being there are two regional nature reserves on the territory of South Bohemia kraj--Sumava South (from 1963) which combined with the West Bohemia section represents our largest nature reserve, and the Trebon area (1979) which because of its outstanding natural values has been included among the UNESCO biospheric reserves. The establishment of new nature reserves has been under discussion already for several years. It is, however, wishful thinking only. This is precisely why we discussed this topic with two workers of the Kraj Center of State Care of Historical Monuments and Nature Protection at Ceske Budejovice--deputy manager Eng Miloslav Kanka and Eng Vaclav Polak, head of the department of general nature protection.

[Question] What is the cause of this situation?

[Answer] The fact is that we would like to establish a regional nature reserve (chranena oblast--CHKO) on the territory of the Blansko Forest and Novohradske Mountains. This is not a new idea because the preliminary project for CHKO Blansko Forest was first conceived in the 1970's. This appropriately documented proposal eventually reached the CSR Ministry of Culture, where it has been "sleeping" for 5-6 years and waits for the final decision. So far as we know, everything depends on the definitive form of the new model edict for establishing regional nature reserves which is now in the works... The situation with the proposed CHKO Novohradske Mountains is somewhat different because we began with its preparation only in 1984 when we worked out a tentative proposal. It is now discussed in the KNV [kraj national committee] and then we will submit it to the CSR Ministry of Culture for a final decision.

[Question] Why did the choice fall on the Blansko Forest and Novohradske Mountains?

[Answer] In both instances the quality of natural and seminatural ecosystems was decisive. This applies both to the Blansko Forest with the heart in the

Kremzská Hola, where for example natural forests have been preserved with the fir representation, and to the Novohradske Mountains, which is a region not significantly marked by man's activities. It is sparsely inhabited and there is no industry. And it is precisely the CHKO statute which should protect both areas from many negative civilization affects an uncontrolled management.

[Question] Is not the delay in declaring the Blansko Forest a CHKO harmful?

[Answer] It is in any case. Precisely in the example of the Blansko Forest we can see what deteriorated in the last 10 years. Let us say immediately that this did not have to be so, if the CHKO administration had existed. There has been a radical progress for example in reclamation, the meandering Kremze creek underwent a recultivation with the result that it now flows in a straight line. We could continue along this line because this region is really intensively managed. We are of the opinion that if this area is not declared a CHKO in the nearest future, the ecological damage will be considerable.

In other words, everything depends upon the decision of the CSR Ministry of Culture. If the Blansko Forest is declared a nature reserve this year, it will be only for the good--even if the delay cannot be made up for. The Novohradske Mountains project in the course of the Eighth Five-Year Plan. It appears that the quality of our natural environment is determined not only by the investments which the state allocates for this area, but also by timely and correct decisions.

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CSO: 2400/178

POLITICS

CZECHOSLOVAKIA

MECHANISM FOR PROCESSING COMPLAINTS

Prague RUDE PRAVO in Czech 22 Jan 86 p 1

[Editorial: "Attention Must Be Paid to Well-founded Complaints"]

[Text] It is said of comments, notifications and complaints by workers that they are the mirror of people's moods. Our fellow-citizens who do not keep aloof and are attentive to things around them draw attention in various forms to malpractices which they encounter. For this reason the state, economic and party organs must constantly pay systematic attention to the processing of citizens' comments.

Our representative organs perform an important mission in settlement of comments and complaints of our citizens. Within its control function the CSSR Federal Assembly deals every year with the results of the audits of the CSSR Committee of People's Control. It examines how the comments are handled by the state and economic organs, organizations and national committees at various levels for which the processing of initiative proposals and complaints constitutes a permanent and solid part of their everyday work. The audits check not only how the notifications are handled, but also what use is made of them in practice, how they contribute to the rectification of criticized shortcomings.

Naturally, the causes of complaints also are evaluated in this context. To determine the cause means also finding the key to their elimination. It is not always easy. People who file a complaint frequently draw attention also to unverified phenomena or proceed from subjective feelings, assumptions and wishes. It is by no means an exception that some people want in this way to promote their own narrow personal interests or even to settle their personal accounts. Thorough investigations detect such instances and prevent incorrect courses of action which could lead to incrimination and slander of honest fellow-citizens.

Although generally speaking the processing of complaints is positive, there are big differences between individual branches and sectors. During the period just passed there was a decline in the number of complaints about the shortcomings in the supply system and trade as well as in the comments on agriculture and food production, forestry and water management. A great deal

of work was done toward the improvement of living environment which resulted in the decrease in the number of comments.

Although the total number of complaints has decreased, this does not mean that everything is in order, that the responsible workers can look at the conditions through rose-colored glasses. Comments and complaints are still being sent particularly on the nonobservance of working hours in the retail trade and services, on the continuing shortage of certain food products on the market, dietetic foodstuffs, lentils, beans and others. People point to the low quality of certain services, constantly criticizing the shortage of spare parts, particularly for engineering products, which totally prevents the use of some appliances and other durables. Justified complaints continue to be received in regard to the services of Mototechna enterprise. The number of labor disputes and their causes and uncleared instances of wage disputes are on the increase. There has been an increase in the number of unfavorable comments on management of apartments, inadequate maintenance and repairs of apartment houses. Many unfavorable comments continue to be received on the shortcomings in transportation.

What are the most frequent reasons for citizens' complaints? An analysis made by the CSSR Committee of People's Control has revealed that most frequently it was inferior management and supervision of the organs in question and their workers, violation of regulations particularly in the administrative procedures of national committees, violation of government's resolutions and other edicts and regulations, violation of planning and financing discipline, technological discipline.

In many instances to which people drew attention the investigation has made it clear that the workers in charge were not sufficiently consistent in requiring their subordinates to perform their duties properly. Shortcomings in work organization have also been detected which resulted in uneconomical procedures and plain waste. Moreover, the control organs were not very demanding and systematic. Their benevolent attitude in exercising their responsibility frequently amounted to overlooking the discovered deficiencies.

The filing of a complaint and the determination as to whether it is justified constitute only the first phase of handling workers' complaints. The principal part is the correction of shortcomings, publication of the results of investigation and punishment of culprits. Only then can the complaint be regarded as settled. People must learn what was done with their notification, what has improved, and at the same time the report on investigation must make clear what will be done to eliminate the cause of shortcomings.

In discussing these matters in the committees of the Federal Assembly, the deputies evaluate this aspect of work together with the workers' comments. They could state with satisfaction that, generally speaking, increased attention was being paid to the settlement of complaints, that the complaints were examined more thoroughly, and that specific measures were being taken for the elimination of criticized shortcomings, including making specific persons responsible. Their opinion was endorsed by the presidium of the Federal Assembly, which particularly appreciated closer cooperation of party, trade union and youth organs in investigation of serious complaints and also cooperation with the organs active in criminal proceedings.

Nevertheless, the presidium of our supreme representative organ pointed out the inefficiency of measures adopted for overcoming antisocial phenomena in the organs and organizations, in services to the population, in apartment management and maintenance, and in negotiations on labor and wage matters. The still high number of anonymous and repeated complaints remains an important phenomenon.

In the handling of complaints and comments, subjective influences such as incorrect actions and attitude of workers in charge in their dealings with citizens and tardy and bureaucratic settlement of their affairs still have not been eliminated.

The resolution of the presidium of the Federal Assembly therefore recommended that the committees of both chambers pay systematic attention to both the trend in and settlement of workers' complaints in individual sectors. Not only from the standpoint of their eventual settlement, but primarily from the standpoint of elimination of their causes and thus also of repeated complaints. The deputies must also be more active in their electoral districts in direct handling of complaints on the spot.

An early and correct response to the citizens' notifications strengthens the authority of state organs to which the citizens turn and also strengthens the legal consciousness in citizens at the same time: consciousness that the society is governed by just principles which make it impossible for some of its members to live at the expense of others, to enrich themselves with impunity, to do slovenly work, to acquire advantages which do not belong to them.

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POLITICS

CZECHOSLOVAKIA

UNFINISHED SEWER SYSTEMS

Prague RUDE PRAVO in Czech 21 Jan 86 p 2

[Unsigned article: The Sewer System Still Inadequate"]

[Text] Without the subsidiary lines (pripojky) the public sewer system is little less than 25,000 km long and the number of inhabitants residing in the houses hooked to it is 9.5 million (including 7.2 million in the CSR), in other words 62 percent of the total. In view of the fact that more than 76 percent of people receive water from the public water supply system, it is not much. In Slovakia in particular, the construction of sewer networks does not meet needs and lags considerably behind the construction of water supply lines. While 69 percent of SSR inhabitants receive water from the lines, only 44 percent of the population are hooked up to the sewer system.

THE amount of waste water released through the public sewer system in the CSSR increased 6 times during the last 40 years and amounts to almost 1.3 billion cubic meters per year today. Part of this waste water is purified in approximately 850 sewage treatment plants whose capacity exceeds 3.2 million cubic meters per day. The largest is the central sewage disposal plant for Prague.

The objective of the water supply management is, and will remain in the future, a more rapid construction of the sewer system and achieving harmony with the construction of the water supply system.

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POLITICS

ROMANIA

FOREIGN CRITICISM OF BUCHAREST RECONSTRUCTION WORK REFUTED

Bucharest SAPTAMINA in Romanian 10 Jan 86 pp 6-7

[Article by Corneliu Vadim Tudor: "Falsehood Has Short Legs"]

[Text] Like any big urban settlement, the city of Bucharest has its destiny. Sometimes cruel, sometimes kind, this destiny marks the city's existence for more than half a millennium. Located at the confluence of the great trade routes that linked the east with the west and the north with the south, at the epicenter of the crossing of the great migrations of nomadic populations, the city has had a tumultuous history that personalized it and made it unique of its kind. Attested documentarily for the first time on 20 September 1459 by a charter issued by the chancellery of Prince Vlad Tepes, the city has a far older history, however, demonstrated by the traces of successive layers of civilization that go back to the Paleolithic. The very vicissitudes of history caused "the Dimbovita's beautiful city" (as it was called in a document from the Middle Ages) to not preserve an attesting document prior to 1459 and to not have edifices and dwellings from times that preceded that era. And yet, the city was beautiful, especially due to the rich natural setting and to the skill of its inhabitants, so that the king of Hungary, Matthias Corvinus, was able to write to the pope, around 1460, about "the wonderful capital city of Bucharest."

Speaking about the city's existence, we cannot ignore the countless misfortunes that have befallen it: from the devastating great occupation (due to the Ottoman troops led by Sinan Pasha, in 1595) to natural disasters. It was to be expected that a city obliged to develop on the basis of perishable construction materials (wood, earth) would fall prey to fires. History thus records "big fires" that destroyed the settlement in various eras: 1595 (a fire caused by the occupation troops), 1704, 1716, 1719, 1739, 1766, 1787, 1804, 1812, 1813, 1823, 1835, and, finally, 1847, when the worst fire in Romania's history occurred. That time, the fire lasted several days and destroyed nearly a fourth of Bucharest, the damage being evaluated at more than 55 million gold lei, which aroused the compassion of all Europe. Other catastrophes that have befallen the city were earthquakes, of which we mention those in 1681, 1718, 1724, 1738, 1763, 1771, 1787, 1789, 1793, 1798, and 1802, when the Coltea Tower, the churches of Stavropoleos, Coltea, Sarindar, Sf Apostoli, Sf Gheorghe Nou, Mihai Voda, and Sf Atanasie-Bucur, and the monasteries of Cotroceni, Vacaresti, and so on suffered serious damage. Other earthquakes

that caused serious damage were those in 1803, 1804, 1812, 1813, 1814, 1817, 1821, 1823, 1825, 1827, 1829, 1838 (when the walls of the Royal Palace cracked and the Sf Gheorghe Inn collapsed), 1844, 1846, 1864, 1892, 1901, 1940, and, finally, 1977, one of the most violent in the country's history. We will also mention floods, to give an idea of the difficult times through which the city has passed and which, of course, have profoundly affected its appearance and the course of everyday life. Of the most devastating floods, we will mention those in 1675, 1708, 1801, 1814, 1830, 1837, 1855, 1862, 1864, 1865 (when the most catastrophic flood in Bucharest was recorded, the water reaching the height of 3 meters), 1892, 1970, etc. Also adding to all these things the considerable damage and destruction caused by the invading armies and the double Anglo-American and, later, German bombardments during World War II, we can easily appreciate that Bucharest has been one of the most sorely tried cities in Europe. It is truly a miracle that it survived all these horrors and that stone still remained upon stone in its ancestral abode! And we have said nothing about the human victims, about the tragedy of those wounded or orphaned, or left homeless!

Despite all these disasters, or perhaps because of them, Bucharesters have loved and do love their city deliriously. And over the course of time, people like Paul de Alep, Lev Tolstoy, Pietro Mascagni, Eleonora Duse, Sarah Bernhardt, Jerome Bonaparte, Richard Strauss, Seton-Watson, Franz Liszt, and others have felt comfortable in it and have enjoyed its hospitality, with poets like Rafael Alberti and Miguel Angel Asturias dedicating moving hymns to it. Of course, Bucharest does not have the ancient splendor of Rome, or the domes and obelisks of Paris, or the imperial rigor of Vienna, or the towers and bridges of London, but it has an unmistakable specific character, a charm of the Eastern and Western interminglings, a *genius loci* that confers on it originality and heraldic insignia.

And precisely because Bucharesters, Romanians in general, nourish a true adoration for the country's emblematic city, a vast action of systematizing and beautifying it was prescribed a while back. It is no secret to anyone that for hundreds of years the city developed chaotically, without any urbanistic logic. Over the centuries, many districts and zones of habitat, without a precise architectonic line, without a clear urban perspective, were improvised around its ancient abode of habitation, ravaged and weakened by so many calamities. There were, it is true, two actions of systematizing some zones of the capital, undertaken at the end of the last century and in the 4th decade of this century, but they were unfinished and represented only palliatives applied to an organism that suffered from far more serious chronic "ailments." The problem is that the modern city never had a true civic center to it, which reflected both on the aspect of a great metropolis and on the course of its everyday life and activity. In 1857, philosopher Ferdinand Lassalle was upset by "the wild confusion" and by "the mad and picturesque chaos of the city."

There were also visionaries who realized that the picturesqueness and novelty of the Levantine glass partitions could not last forever and that the city too had to enter the orbit of fundamental changes, in step with the laws of progress. One such figure was Mihail Theodorescu, who, in the work "Orasul Bucuresti" [The City of Bucharest], printed in Bucharest in 1934, wrote with much

spirit of anticipation: "Continuing at the rate of changes and transformations that has been observed for some time now, Bucharest will shortly become not only the most beautiful city in Eastern Europe but also one of the most wonderful cities in the world. The capital of this country at the height of progress and prosperity will grow in population and beauty. First, the open spaces will disappear completely, there remaining only monumental market-places, squares, gardens, and parks.... The subway will be put in the center of the capital, there being utilized especially the bed of the Dimbovita. The kiosks, booths, and stalls will leave open space for viewing the monumental buildings, with respect to which the Palace of Telephones will remain a vestige of the past. With the progress achieved in recent decades, at the prompting of great forebears, nothing of all that we still see in our times will exist any longer in the year 2000. The big boulevards will create their new routes bounded by stately public edifices and buildings, with respect to which the Romanian Athenaeum, the Military Circle, and the Savings Bank will remain modest mementos of a remote and long-forgotten past.... We foresee for the city of Bucharest the prospect of normal development, to the ultimate expression of civilization. We foresee for it a greater brilliance than that of Paris, a greater opulence than that of New York, and a longer life than that of eternal Rome."

Consequently, the idea of the subway, of the wide boulevards, and of the monumental buildings was an old dream of Bucharesters and was by no means a latter-day invention that would defy the complaints of the population or would run counter to the evolutive course of the city. Against the background of these realities and desires, the party and state leadership's decision to give Bucharest a modern appearance, to build a civic center in keeping with the imperatives of the era in which we are living, has been greeted with real joy by the inhabitants of the capital. People of different ages and professions, workers, foremen, engineers, writers, artists, architects, etc., have hailed and are hailing this profoundly correct and necessary decision in the pages of newspapers and on radio and television broadcasts. You do not have to be an urbanist to appreciate the extraordinary advantages that a new civic center can bring to a metropolis that, for hundreds of years, developed and branched out at random, did not have radial access roads, and occasioned poor communication between districts and even poorer functioning of the service network. Of course, what happened in Vienna and in Paris in the latter half of the last century, what happened in interbellum Rome, and what happened in other European settlements is happening, within specific parameters, in present-day Bucharest. It is a normal and welcome process that can no longer be postponed without hindering considerably the great city's pace of life. There is no reason for anger here, but, on the contrary, the citizens of the city can be proud that they are participating directly in a project as noble as it is useful, for which the future generations have every reason to thank the present generation. This vast worksite can be understood better, in all its aspects, by considering at the same time two other projects of major dimensions that will have positive consequences for the destiny of this city: the subway and the new face of the Dimbovita River, that is, the revivification of it and the establishment of recreational zones, including the huge Lake Moara basin. Adding to all these things the vast worksites for the construction of housing, for the erection of big industrial platforms, and for the continual expansion

of the necklace of structures devoted to instruction, education, science, culture, and sports, we will have a truer picture of the genuine renaissance that the capital of the country is experiencing.

And yet, however, for a while now, some Western journalists have been making waves to a suspicious degree about this topic, judging that the projects in Bucharest would be a kind of "national calamity." Starting probably from the belief that all the problems of their countrymen have been solved successfully, these reporters, extremely considerate of the fate of Bucharest and of the inhabitants there, are making false alarm signals from a distance of thousands of kilometers. "In great accomplishments it is hard to please everyone," the wise Solon wrote, and we believe that the aphorism applies in large measure to the present situation. Consequently, the systematization of the city and the construction of its civic center will continue because this represents the very will of the over 2 million inhabitants of Bucharest, because the inexorable progress of a country does not await the approval of an outsider. However, what is visibly annoying in some foreign journalists at variance with professional ethics is the obvious dishonesty, the calumny at any price, the ignorance of the Romanian realities. In a manner that is at least odd, much criticism is formulated by French reporters, thus from a country that has experienced and is still experiencing, in its turn, urban renewal and systematization. Under the title "The New Worksites of the City of Bucharest," the AGENCE FRANCE PRESSE correspondent, Didier Fauqueux, stated a number of fallacies that arouse not only our laughter but also our, everyone's, disgust and disapproval. He deplored, for instance, the demolition of the Brancoveanu Hospital, which would have been a "historical monument." The truth is that this hospital was not considered a "historical monument" in any specialized catalog issued by the competent Romanian authorities, for the simple reason that it was of a relatively recent date and did not have characteristics fit to propel it onto the roster of the property considered heritage. Apart from a building corner that dated from 1836, the rest was a number of functional elements from 1905, with the usual heating plant, with washing machines and incinerators, etc. We do not know how this hospital would have fit into the landscape of the modern Unirea Marketplace, which is in the process of being laid out and which will have 112,000 square meters. The hospital problem has been solved for a long time in Romania, with over 50 big health units existing in Bucharest alone. Moreover, the construction of a big hospital in the Drumul Taberei District will soon begin.

We understand that Didier Fauqueux performs his activity in Vienna, but simple professional integrity required him to gather background material beforehand, insofar as he did not know the Romanian realities (and does not know them). He can coolly write the following fallacies: "Thus, the Rahova District, composed of little houses with gardens, called 'ill-famed' by the municipality, was demolished in its turn." How nice that a journalist was found who deplores in the language of Voltaire the demolition of this district that no one in Bucharest regrets. Chance caused the author of the present lines to be born and to spend many years of life in the district in question and to know--at any rate, better than the AFP correspondent--what Rahova's "little houses with gardens" meant. Called for hundreds of years the Bridge of Paupers (that is, of poor people), the district was neither more nor less ill-famed than the

other slums of the city. It was purely and simply a sordid collection of hovels and shabby shops, with streets so poorly paved that it was a big adventure to travel through the area in rainy weather.

Perhaps no one has given a more picturesque description of it than memoirist H. Stahl, who, exactly 50 years ago, wrote in his work with a suggestive title "Bucurestii ce se duc" [The Bucharest That Is Departing]: "Calea Rahovei is longer than a nightwalker's yawn--so long that, after you have climbed the hill to Bragadiru, after you have left its brewery behind, you must go by warehouses, must pass on the left the Central Seminary, must pass--automatically raising a handkerchief to your nose--Odoarei Street and Magurele Street, must pass on the right another dubious district that reminds you again of a Roman emperor (Vespasian--our note), must still walk a few hundred meters until you get near the rails of the railroad, where two red poles with white stripes, like a gigantic benefactor's many-ringed fingers, stop you in place until the Giurgiu train goes by like a whirlwind, scattering the dirt, and then you are only at the midpoint of the road that begins near the Dimbovita, at the Barracks of Justice. While along these roads out to the fields the houses are close to one another, with a barbershop, a farriery, a wheelwright here and there, countless taverns everywhere, in contrast, between one road's end and another road, between the Belu Cemetery and Gheneca, between Filaret and the Dealul Spirei Railroad Station, between these populated points of the Bucharest outskirts there stretch endless open spaces on which the cattle of the dairies graze, there extend vast wastelands on which offal and garbage of all kinds bask in the sun, giving off pestilential stenches, or marshes rich in frogs and disease-carrying mosquitoes--mementos of the not too remote time when the uncanalized Dimbovita paid a visit, unexpectedly, on high days, to the foot of the hills in Cotroceni, Gramont, and Filaret. These marshes are gradually filling with garbage and are becoming new districts where mosquitoes, germs, and dampness are sold by profiteers like expensive swill." Does all this hodgepodge, which, besides occupying an enormous area, endangered the health of the inhabitants and offered them a deplorable, hardly bearable prospect, really merit any regret? Let us be serious. We can regret a past that evokes in us something that has historical, cultural, or sentimental value, but let us divorce ourselves laughing--a philosopher's word--from a past that reminds us only of filth, pestilential stenches, and unhealthiness. Romanians are civilized people, can no longer wash in a brook, or at the pump in the yard, and want to have modern conditions of comfort. Perhaps the morbid taste of the above-mentioned journalist is dictated by the living conditions in Paris and other French cities, but why must he also impose it on us?

Another reporter who "deplores" the fate of Bucharest is the mysterious S.S., who published in LE MONDE calumnious statements like: "Since the start of the demolition in the spring of 1984, 40,000 persons have been moved from the center of Bucharest. More than a fourth of the historical center (sic!) of the city is condemned." We do not know where the author got the figure of 40,000 persons who would have been moved "from the center of Bucharest." What center? If it is a question of the Uranus District, the streets of the Barracks, Antim, Nita Stere, and the others, they do not make up the center of the city at all. The figure is obviously inflated, for reasons that we do not understand, but what seems truly important to us is that these people were able to

be moved to comfortable, newly built apartments, many of which are right on the central perimeter of the city. The journalist who hides behind the two initials also spoke of a "historical center" of the city, a fourth of which would be, in his imagination, condemned. Neither more nor less, but exactly a fourth. What would that fourth be, how would this division have been done, and what is that "historical center" of the city? Here, as in the preceding case, it is a question of ignorance of the city, of the matter under discussion. No matter how odd it may seem, it is wrong to speak of a "historical center" in the case of Bucharest. The phrase implies (as any treatise on architecture can explain) a city enclosed by walls, a fortified, precisely delimited enclosure. Medias, Sighisoara, Sibiu, and other medieval cities in Romania are in the respective situation. S.S. probably confused the "historical center" with the "architectural reservation zone," but, overlooking the confusion of the terms, neither is the latter endangered in any way. It is around the Old Court and includes, among others, the Manuc Inn, the Royal Church, the Baratia Tower, the Sutu Palace, the Lime Tree Inn, the Concordia Hotel, and the churches of Sf Gheorghe Nou, Stavropoleos, Coltea, and the Patriarchate. Was this zone ever threatened, even a fourth of it? On the contrary, it has been restored meticulously, but we will take the opportunity to speak about this aspect later.

And, to stay on the note of totally misinforming the French public, S.S. concluded: "The Commission of Historical Monuments, very active until 1977, but abolished in fact at this date, cannot intervene." From the certainty and sententious arrogance of the assertions, it would seem that S.S. knows what is occurring in Bucharest better than the Bucharesters themselves. But, let us ask him: Who abolished the commission in question, how and in what way? After successive changes, this forum became, in 1975, the Directorate for National Cultural Heritage and operates within the Council for Socialist Culture and Education. But, when journalistic fantasy is compounded with dishonesty, anything seems possible, including the disappearance of a fourth of the "historical center" of the city and the disappearance of an entire commission, composed of flesh-and-blood people. Probably, some reporters from LE MONDE understand in this way how to rectify the delicate situation of the newspaper, found at the end of 1984 (in the opinion of AGENCE FRANCE PRESSE) "in a state of insolvency" for the first time in its history. However, we fear greatly that, by publishing much-demanded sensational and easily refutable material, the once prestigious newspaper will also lose the remaining moral credit that it still has with the French public!...

And Arielle Thedrel judged, in the daily LE FIGARO, that "the disappearance of a fourth of the historical Bucharest" was recorded in 1984. To then extend the dramatic nature of the situation to the whole country: "This destruction is not limited to the capital: Similar operations may be undertaken in the cities of Brasov, Iasi, Oradea, and Targoviste." Romania has some hundreds of cities, and why A.T. would not have mentioned all of them, we do not know. In for a penny, in for a pound!

Jean-Yves Huchet published an even more hostile article on 1 April 1985 in the newspaper LE MATIN, under the bombastic and menacing title "Bucharest: A Destroyer Unsheathes Its Claws." No doubt, the journalist wanted to play a

trick on his readers, it being April Fools' Day; otherwise, the incredible series of lies that he assembled in this article is not explained. As a matter of fact, the newspaper LE MATIN relapsed into calumnies and irresponsible assertions about the accomplishments in Romania. We ought to make a digression, indicative of the clearly anti-Romanian character of material carried by the above-mentioned publication. The article "French Justice Condemns" can be found in issue No 1, 1985, of the periodical DREPTATEA, which appears in the Romanian language in the United States, from which article we extract: "Relying on the testimony of Messrs Paul Goma, Mihnea Berindei, K. Ponian, Gabriel Zamfirescu,..., the newspaper LE MATIN conducted a press campaign against Mr Pordea, accusing the deputy to the West-European Parliament of being a spy for Romania, because he stated that 'Transylvania is the cradle of the Romanian people.'" We read in the same American periodical that the French newspaper "was condemned by the court in Paris for defaming the French citizen." The hidden motive is clear: Relying on the testimony of turncoats, on their bad dispositions, and on hatred for what is sacred to Romanian hearts, the newspaper managed in the sad performance to denigrate a man just because he feels nostalgic about Transylvania and believes in its millennial affiliation with the history and territory of Romania. It is as if a Frenchman would be condemned around the world for spying for his country of origin due to his belief that Brittany or Alsace is French territory. The absurdity of the situation and its dangerousness are as clear as can be. With such a furious beginning, anything can be falsified. Consequently, the echoes of its public condemnation by the highest court of Parisian justice had not even faded away, and yet the respective newspaper persisted in anti-Romanian diatribes, behind which Paul Goma and the other fugitives of his sort could very well be. Everything displeases them, because everything in Romania is dirty and foul.

We learn, for instance, in Jean-Yves Huchet's article, that our officials "have decided to wipe from the face of the earth the old historical center of the Romanian capital, in order to set up a political and administrative center, served by Victoria Socialismului Boulevard." Do you see the quantitative leap? It is no longer a question of the "academic fourth" of the old center, but of the entire zone, of course! The totalitarian journalist is crying, like Volney, over the ruins of buildings that he calls, also in ignorance of the facts, "historical monuments." It is a question of, among others, the churches of Spirea Veche and Spirea Nou, which were never "historical monuments," given the fact that they were structures a few decades old, without any historical, cultural, or architectonic value. It was also asserted that "part of the precincts of the Antim Monastery or the hospital founded by Brancoveanu no longer exists." First, it must be specified that Prince Constantin Brancoveanu had been dead for more than 100 years when the above-mentioned hospital was founded. Here, as in other cases, it is a question of ignorance of the situation, of the history of the buildings under discussion. Second, that "part of the precincts of the Antim Monastery" sounds extremely vague. However, the journalist did not breathe a word about the preservation and restoration of the whole monument, including the church, or about the re-location of the synodal building with great efforts, which is not even a historical monument, it being built in 1900.

The avalanche of whopping lies continued: "Other historical monuments--the churches of Sfintul Ilie Rahova and Olari or that of the Scitul Maicilor Monastery--were seriously damaged during the move." Any foreign journalist, urbanist, or historian who wants to be enlightened can move to Bucharest and see the excellent condition of the above-mentioned monuments. Not only did their relocation not affect them at all, but also everything was reinforced and restored (the restoration of the facades, floors, and steeples) as a result of finicky work that cost considerable sums, requiring the talent and self-sacrifice of whole staffs of experts. This being said, the slanderer drew an apocalyptic conclusion: "The regime wiped everything from the face of the earth."

Is that so? To correctly inform those interested, we will present a concise list of the monuments that were restored in Romania in the last 10 years alone. According to the records existing at the Council for Socialist Culture and Education, no less than 750 religious monuments and 500 secular monuments, thus a total of 1,250 monuments, were restored and returned to the museum and tourist circuit in the 1976-1985 period. We will dwell more on those in Bucharest, noting from the very outset that there is no longer any monument affected by the catastrophic earthquake in 1977 that has not been reinforced and restored. Of them, we mention the ones most seriously affected, which are now leading a new life: the churches of Sf Apostoli and Marcuta (16th century), Radu Voda, the Patriarchate, Plumbuita, and the Lady (17th century), Elefterie Vechi, Sf Stefan, Sf Spiridon Nou, Alba, Sf Gheorghe Nou, Foisor, Razvan, Stavropoleos, Coltea, and Sf Sofia-Floreasca (18th century), Zlatari, the Sf Iosif Cathedral, Sf Silvestru, and Selari (19th century), then the Mogosoaia Palace and Church (1685-1708), the Sutu Palace (1832), the Ghica Tei Palace and Church (1822), the Museum of Collections (or the Romaniti House, 1830), the Baratia Tower (1847), the Stirbei Palace (1865), and so on. The buildings of other religions were also restored, such as the Sf Iosif Catholic Cathedral and the Muslim Mosque, as well as the monuments in the architectural reservation zone around the Old Court: the Royal Church (the oldest monument in Bucharest, erected in 1545-1551), the Vaivodal Palace, the Royal Winery, the Court of Glassblowers, the Lime Tree Inn, the Old Coffeehouse on Covaci Street, the Carul cu Bere Restaurant, and the House of Fashions, all being buildings erected in the 1600-1890 period.

There are also other houses and buildings, dating from about the same period, that have received the first coat of paint: the Melic House (the oldest private house in Bucharest, dating from 1760), the Cantacuzino House, the CEC [Savings and Loan Bank] Building, the Central State Library, the A.I. Cuza House, the Gradisteanu House, the Park of Roses, the Central School for Girls and the Lens-Vernescu House (both built from designs by architect Ion Mincu), the Hall of Justice, the Faculty of Medicine, the Academy of Economic Studies, and so on. In a number of buildings, the restoration of the murals has been done (or is in progress). Of them, we mention: the churches of Coltea and Sf Spiridon Nou (with paintings by G. Tattarascu), Radu Voda, the Patriarchate, Sf Gheorghe Vechi, Sf Sofia-Floreasca, Sf Ecaterina, Marcuta, the Lady, Stavropoleos, and Mogosoaia, then the Sutu Palace, the Matilda Villa (the only interior decorated by our great painter Stefan Luchian), etc. And, sure enough, the restoration of the frescoes and murals was done skillfully and accurately, not like that deplorable kitsch painted by a Frenchman, in 1875, on

the walls of the ancient Curtea de Arges Monastery! Regarding the church of the Mihai Voda Monastery, which the amateur lawyers deplored so much, we will say that it was relocated in good order at a distance of 279 meters (lowered simultaneously, with a height difference of 7 meters) and is now undergoing extensive work of restoration and of development of a wide, majestic market-place, which will utilize its splendors better. It is planned that this church founded by the ruler of the union of all the Romanians is to become a museum-church. Should we also mention the impressive number of ancient and medieval cities, of palaces, churches, towers, and houses restored throughout the country? Whole pages of the magazine would not suffice us!

In order to explain about the acumen with which some writers abroad, out of touch with the Romanian realities, dispute these facts, we will give just one example: A certain Monica Lovinescu, "astray" in foreign parts, who pours out venom and howls on a foreign radio station, asserted not long ago that the Black Church itself in Brasov had been demolished. These are fallacies that the traitors to their country are expressing. This place of worship receives tens of thousands of Romanian and foreign tourists each year and hosts ceremonies and organ concerts, and as a result of the reinforcement and restoration done by Romanian experts, as a result of the infusion of health received, it will still have at least a millennium of life. Hundreds of thousands of people throughout the country have worked on this entire activity of preserving the national heritage (which has not ended, of course), hundreds of millions of lei have been spent, and hundreds of billions of working hours have been sacrificed gainfully! Is it really possible, with a pen, to trample underfoot the work of these people, the sacrifices that a country like Romania, with more serious and more urgent priorities, is making in order to preserve the treasures of its past? Or do the French journalists perhaps believe that the regimes before the Communist regime had established a heaven on earth in Romania and each church tile or cross was studied with a magnifying glass and stored in a glass case to protect it from bad weather? A concise comparative analysis is overwhelming and shows with the undeniable power of the facts that only now, after some decades, are the monuments in Romania really being preserved and that there is a true state policy in this regard. At the end of the last century, a mayor like Pake Protopopescu was purely and simply adulated by some journalists for the act of completely demolishing, during actions of systematization, the Sarindar Church, founded by Prince Matei Basarab in 1650, and the renowned Coltea Tower, built in 1715, a true emblem of the old city. These are wounds that no one can heal now and we feel that, if those monuments had survived until our times, no one would have dared to eliminate them from the landscape of the city, but would have helped them to last.

Here is another example, just as relevant, extracted from an article devoted by Dr C.I. Istrati to the great painter Nicolae Grigorescu. The article was published in Minerva's "1908 Almanac" and illustrates the sorrow of the Romanian artists in the face of the barbarism of the officials: "Consequently, how much he suffered, often seeing what was occurring here, especially when he saw how our monuments were being restored. He was embittered and shocked to the depths of his soul, both as an artist and as a Romanian, by the vandalism that he saw occurring: the wiping of the historical monument from the face of the earth and the replacement of it, often, with another that had nothing to

do with the one gone! 'If I could, I would hang them,' he, who was incapable of killing a fly, told me, he was so angry. According to him, there could be no greater crime than what was being done with our national monuments. When he heard of a new desecration, it was as if I saw him exclaiming: 'The savages!'--that showed everything that was occurring in his soul." A final example: the demolition of the house, in the Ipotești Commune (Botoșani County), in which the National Poet of the Romanians, Mihai Eminescu, was born, by a family of Greek landowners. It was purely and simply a sacrilege that would not have been tolerated in our times. But it is not our intention to oppose one historical era to another merely for the sake of explaining some journalists at variance both with professional ethics and with common sense. We will ask them just one thing: Do they really know how Paris was systematized in the latter half of the last century, how this city came to have wide boulevards and airy marketplaces? If they do not even know the history of their own capital, we will furnish a few topics for reflection, as taken from the work "Storia dell' architettura moderna," written by an authority on the subject, Prof Bruno Zevi (Giulio Einaudi Publishing House, Turin, 1975 edition): "However, the 19th century is characterized particularly by great urban restructurings. Of them, that of Paris, orchestrated by Georges-Eugene Haussmann, in the 1853-1869 period, heads the list. Under the ax of a bureaucratic plan, 27,000 buildings of the 66,578 in existence were demolished, and although another 100,000 were built, 25,000 inhabitants of the old center, mostly workers and artisans, were expelled and had to take refuge in rural communes. The medieval fabric of the city was brutally torn up by the straight imperial boulevards, behind which vast sectors of shacks remained." And, Zevi concluded: "A humiliating and despotic program, perfectly represented by the classicism of axes and symmetries, by a rhetorical pomposity from which countless capitals in the world would be inspired!"

Do you perhaps think that the demolition in Paris ended with Haussmann's death? By no means, and the best example is the wiping of the old Central Market from the face of the earth, an operation that shocked much of the French public a few years ago. In its place, in the zone of the Beaubourg Plateau, there was put the Pompidou Center, which, with its pipes of various colors and sizes, with its visceral and macabre statues, looks like a mixture between a petrochemical combine and a sanatorium designed by the patients themselves. The French themselves have written that the center is a "hangar of art" and a "supermarket of culture," and one wit asserted that the edifice sticks to the face of Paris like a mustache on the face of La Gioconda. Will the monumental buildings in the civic center of Bucharest be more uninspired than the Pompidou Center? Hard to believe.

We are extremely curious to know if the zealous "defenders" of Romanian values took a stand, a decade ago, against the demolition of Constantin Brancusi's studio on Impasse Ronsin, which was restored later within the above-mentioned center. It is very difficult for us to imagine how the gifted sculptor's antiquated studio harmonizes with the violent and shocking space rockets of the center. Our previous speakers wrote about "megalomania" in the case of the construction in Bucharest, about the "colossal sums" that would be spent, but they seem to forget that, at precisely this time, the public in their country is not too enchanted by the construction of the third Arc de Triomphe (\$160

million) and of the opera house (\$250 million), which do not even fit into the setting of the Place de la Bastille. And, because capital was also made of the restoration in Bucharest: Do the reporters in question really know that a single building in the entire architectural reservation zone of Paris is actually being restored from state funds? Do they really know that in Marseilles, for instance, a 16th-century building, illustrative of the Louis XII style, was moved recently and hidden behind some new buildings?

The examples could continue, of course. It is wiser for us to say that it is the prerogative of each municipality and of each country to utilize and preserve the treasures of their past as they see fit, without the advice of others. But, because our unseen speakers also touched upon subjects referring to the comfort of Bucharest dwellings and to the dramatic situation (??) of the living space in the capital, we will also make a few remarks to them. Very many apartments, extremely cheap in relation to prices elsewhere, a fact about which not many cities of the world, engaged in construction of such scope, can boast, have been built in Bucharest. The comfort is what it is, neither better nor worse than in other areas of the world. However, what can we make of the comfort and living conditions in Paris, over which the accused reporters pass in silence?! As Western journalists themselves state, on the basis of direct observation and indisputable statistics, where the smile of the City of Light ends, a Paris of misery, of poverty, of unhealthiness begins. In an article published recently by LE NOUVEL OBSERVATEUR, it says that over 600,000 inhabitants of Paris, especially emigrants from the Maghrebian countries, live under particularly harsh conditions, and 80,000 families are obliged to live in the so-called "hotels for the poor." According to the publication LES ECHOS, over 40 percent of the inhabitants of Paris lack at least three elements: a kitchen, running water, and a bathroom; on the outskirts of Paris, the comfort is even less. According to the 1975 census, about 450,000 dwellings (41 percent) in the capital of France are overcrowded. The same publication stated that, of the 3 million dwellings existing in the Ile-de-France region, approximately one-third have minimal comfort. The census found that nearly 25 percent of the dwellings in this region are not provided with any kind of sanitary installations. Another publication says that about 1 million apartments in Paris do not have plumbing and heating, with the so-called Turkish closets, unchanged for hundreds of years, being prevalent. Are these possible subjects for the French reporters? We do not understand why some of them will discover them on the banks of the Dimbovita, when they have them in abundance under their noses, on the banks of the Seine!

For the progress of their country and for helping the people, it would be much more useful for the reporters from LE MATIN, LE FIGARO, or LE MONDE to write about the incredible costliness of life in Paris, if subjects connected with habitat still concern them. A study made by the French themselves stated that, in order to live modestly in the capital of France, you must earn at least Fr 4,500 per month, which exceeds the income of the average Frenchman. Under the title "Paris Is Driving Out the Poor and the Young," the newspaper FRANCE SOIR noted bitterly that, due to high rents, Paris is rapidly declining in population and that tens of thousands of families are on waiting lists for apartments at modest prices. Commenting on a report of the Institute of Statistics and Economic Studies, LES ECHOS wrote that the population of Paris and

its suburbs is dropping annually by 40,000 persons, a rate that has led to nearly 1 million "refugees" in 20 years. According to the publication, the causes are the rise in rents, the scarce transportation, the deterioration of the medical-care system, and the great increase in crime. One possible subject for those 4 amateur urbanists would be the existence of 100,000 Parisian apartments unoccupied because of high rents, a sad reality that caused the newspaper L'HUMANITE to write: "In the Parisian jungle there is no better way of getting rich than speculation in real estate." In an absolutely comradely way, we will also propose to the journalists so considerate of the fate of the people and of historical values several subjects that they have available: the 2.5 million unemployed that France now has, the French nuclear tests, the street violence, the 6 million alcoholics (according to the book "France and Its Lies," by Francois de Closets, each French adult drinks annually two times more than a West German, three times more than an Englishman or an American, and four times more than a Swede or a Dane, with the volume's conclusion being that "no other people drink as much alcohol as the French"), the counterfeiters, the juvenile delinquency, the wave of pornography, the political assassination, the tax evasion, the bankruptcies, the suicides, all sorts of illicit trade, the consumption of drugs, the humiliating situation of the emigrants, the rate of inflation, the "demographic Sedan" (in the words of a colleague of theirs), the prostitution, and so on.

In the scandalous Greenpeace affair, some French intellectuals maintained such an embarrassing silence that journalist Edward Behr published a harsh indictment in No 43, 1985, of the American magazine NEWSWEEK: "In the time of Zola or Jean Paul Sartre, this would have given rise to protest marches, petitions, and newspaper editorials filled with indignation. But such is not the case in the Paris of the 1980's. A few intellectuals tried to defend the role played by the government, and the rest cynically recorded another gaffe of the government, but kept quiet." It is easy to give advice to others, from a distance and in a perfunctory way, having cheap slander as a sole source of information. The Romanian has a saying, regarding which we are sure that there is also an equivalent in French: "You see the mote in another's eye and do not see the beam in your own eye." A somewhat similar symbolism is found in La Fontaine's fable "The Moralistic Wolf," which we hope no longer has to be explained to our French colleagues. And, whence this habit of feeling responsible for everything that happens in another country, of superciliously giving advice, of commenting on facts and realities which you did not know a day before writing the article and which you forgot a day after the appearance of the article, because, at bottom, they do not really interest you, everything is only a perfidious diversion, an attempt to sully the work and life of millions of people whom you have never seen in your life?!

Let Bucharest develop in peace, dear colleagues, and tend to your own affairs, because, heaven knows, you have enough! We, those here, are not destroying the past, because the Romanians have a true adoration for their history and the values inherited from their forebears. We are destroying only the memory of the disasters and misery, the sordid slums and the hovels that can be stifling if they are not run over with a bulldozer and passages are not opened up for the sun. And this is happening in a city and in a country that were plundered for hundreds of years by transient foreign occupiers, in a country and

in a city that have known all possible horrors, natural and military, often being obstacles in the path of invasions, precisely so that other cities could flourish under the star of civilization and enjoy the fruits of peace. The capital of Romania is now experiencing the finest urbanistic time in its whole existence, and the joy of its inhabitants cannot be overshadowed by any hostile and mendacious propaganda. We will speak again, perhaps, after a few years, and you will see that we were right and that there is enough room in Bucharest even for a Romanian acropolis. We are not vindicating ourselves to anyone, but to the future and the generations of tomorrow, which are entitled to a spacious and clean home, surrounded by gardens and a necklace of lakes.

Too good and too old relations link us with France and its intelligentsia for us to generalize the mistakes of a few, not exactly inspired journalists. Consequently, we will conclude on an optimistic note this plea for truth and for responsibility to the written word, reproducing the opinions about Romania from an honest intellectual, the renowned Prof Maurice Baumont: "In the course of 4 decades, my frequent research trips to Romania have helped me not only to admire it but also to know it. And I do not know how many Romanians of old would fit into the Romania of today. Your museums are exemplary, your assault on science is impressive, your structures are astonishing. I have roamed Romania far and wide. I have discovered a strong, tumultuous vigor everywhere. It is the enthusiastic work for a better future." Whom shall we believe, consequently: some scandalous reporters or a scholar who has brought glory to France?

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CSO: 2700/102

POLITICS

ROMANIA

ROLE OF PEOPLE'S COUNCILS IN IMPLEMENTING 1986 AGRICULTURAL PLAN

Bucharest BULETINUL OFICIAL in Romanian Part I No 70, 20 Dec 85 pp 4-6

/Decision No 2 of 17 Dec 1985 of the Legislative Chamber of the People's Councils Approving the Draft Plan for Development of Agriculture and the Food Industry for 1986/

/Text/ Upon discussing the Draft Plan for Development of Agriculture and the Food Industry for 1986, the Legislative Chamber of the People's Councils finds that it was drafted under the direct supervision of Nicolae Ceausescu, party general secretary and president of the republic, and is in conformity with the decisions approved by the 13th Party Congress, with the documents of the Third Congress of People's Councils, and with the provisions of the National Program To Obtain Certain and Stable Yields in Agriculture, those of the Program for Regional Self-Management and Self-Administration, and those of the Uniform Program To Increase Agricultural Production on Cooperative Members' Farms and Private Farms.

The Legislative Chamber of the People's Councils finds the provisions of the Draft Plan for Development of Agriculture and the Food Industry for 1986 in accord with the party's and state's economic policy of further development of the productive forces regionally and throughout the country as a whole.

On grounds of Article 6a of Law No 5 of 1975 on the Congress, Legislative Chamber and Conferences of the People's Councils, the Legislative Chamber of the People's Councils hereby decides:

Article 1. The Draft Plan for Development of Agriculture and the Food Industry for 1986 is hereby approved.

Article 2. In order to fulfill and overfulfill the Plan for Development of Agriculture and the Food Industry for 1986, the people's councils will take measures for:

a) Exact implementation of the tasks assigned for 1986 in the National Program To Obtain Certain and Stable Yields in Agriculture through use of the allocated technical-material base to full capacity;

b) Implementation of the task of increasing the agricultural and arable area by reclaiming some nonagricultural lands and strict observance of the approved time limits for recovering the areas assigned to investment projects and other activities and restoring them to agricultural use;

c) Complete and intensive use of the land reserve's productive potential through complete use, by every holder, of agricultural areas for the purpose specified in the plan; continued qualitative survey and organization of the territory to permit determination of the productive potentials of all agricultural lands, and arrangement of crop rotations for every crop area with stable soils, optimal dimensions and as homogeneous production conditions as possible;

d) Introduction and expanded cultivation of the most productive varieties and hybrids, production and use of the better biological categories of seeds, optimal density of plants according to law, punctual fertilizing and maintenance of crops, prevention and control of diseases and pests, and the necessary waterings of the entire area improved for irrigation, with rational use of all facilities in the inventory and reduced consumption of fuels, motor fuels and energy. For the greater economic effectiveness of the fertilizers, steps will be taken for their better organized and managed transportation, storage and application in correlation with the needs of the plants and the agrochemical classifications of the soils as well as the optimal balance of the fertilizing elements.

e) Increased vegetable production in a structure suited to each county's consumer needs, providing for supply of the public with fresh vegetables for the longest possible period of the year; maintenance operations in vineyards and orchards, and modernization of orchards and formation of new ones on the intensive and superintensive system;

f) Complete use of the areas assigned to double and successive crops through cultivation of corn, vegetables, sunflowers, kidney beans, fodder plants and other crops;

g) Timely determination of the areas for highly productive intensive crops and procurement of the technical-material base and other facilities for record yields in accordance with the approved programs for each county, and periodic instruction of the specialists, drivers and other agricultural workers for their thorough mastery of the technologies for each crop;

h) Harvesting, transportation and storage of the agricultural output at the best time in order to minimize the losses, and timely arrangements for the premises needed to preserve and maintain the output;

i) Considerable development of zootechnology in the socialist sector of agriculture and on private farms by:

- Improving reproduction and the breeds, attaining the planned birth rates, and minimizing the losses;
- Increasing the number of cattle on the small farms attached to truck gardens as well as the number of hogs on the adjoining farms;

- Increasing the average livestock yields and strictly observing the weights of the livestock on delivery that are specified in the plan;
- Increasing the yields per hectare both of cultivated fodder plants and of natural and wooded pastures by expanding improvement projects in such areas; further use of coarse fodders and secondary products and enrichment of their nutritional value. The area of stubble fields earmarked for sowing the autumn crops will be used for pasturage, and those areas will be plowed by 15 August. The double crops will be preferably irrigated, while the improvement measures specified in the special programs will be applied to the pasture lands.
- In order to provide the fodders needed to raise the livestock at minimum production and transportation costs, the county agricultural and forestry organs will provide the areas needed to produce the fodders in the immediate proximity of the zootechnical units. The holders of natural and wooded pastures will conclude longer-term contracts with the zootechnical farms and complexes for use of their pasture lands. The zootechnical farms and complexes are responsible for all agricultural and plant improvement projects on the areas contracted for, and for their rational maintenance and exploitation.
- Further modernizing those zootechnical complexes and farms in order to provide optimal shelter and the water required for the livestock through inexpensive measures;
- Determining (jointly with the Committee on People's Councils Problems, the Council for Socialist Culture and Education, the Ministry of Education and Instruction, the Ministry of Forestry and the Central Union of Cooperatives for Production, Purchases and Sales of Goods) the measures needed to fulfill and overfulfill the plan tasks for raising domestic rabbits and developing beekeeping and fish breeding. They will also take steps to develop sericulture by involving more private farms and forestry units and schools in that activity.

- j) Improving the organization of production and labor in all agricultural units, consistently applying the overall contract system, further improving the work norms, determining the consumption of manpower for each operation, increasing responsibility at work for purposes of strict observance of production technology and prompt and better performance of all agricultural operations, and strengthening order and discipline;
- k) Completion of the centralized state reserve of agricultural products and the county consumption funds, and consistent application of the principles of regional self-management and self-supply for a better supply of the public in all seasons of the year;
- l) Support of private farms with seeds, planting stock, quality breeders, fodders and technical aid and guidance in order to obtain the greatest possible crop and livestock yields in accordance with the approved uniform program;
- m) Better use of agricultural raw materials in the food industry; complete use of existing production capacities; diversification of production and improvement of its quality through assimilation of new varieties with better qualities that will best suit the public's preferences and meet the requirements

of a rational nutrition. The technologies will be redesigned, the production flows will be rationalized and the formulas will be improved for manufacturing the products in order to better preserve their nutritional characteristics, cut the losses and increase the mechanization of the handling and transport operations. Production in the small-scale food and culinary industry will be developed by producing diversified assortments of semipreparations, fish preparations, pastes and other culinary products that will make up varied and complete menus and help to lighten the work on farms and to improve the supply of the public in civilized forms.

n) In order to implement the planned investments steps will be taken to provide the technical-economic studies and documentation for new capacities, to implement the investment projects on the basis of standardized technologies and designs, to keep lowering the inputs of metal, cement and other energy-intensive materials, to make extensive use of local materials and utilize the recoverable ones, and to activate the investment capacities within the planned time limits.

o) More effective economic activity in all state and cooperative unified agroindustrial councils and in all agricultural units through more complete use of the land reserve and technical-material base, reduced material outlays, greater labor productivity, improved qualitative indicators and lower inputs of raw materials, materials, fuels and energy;

p) Encouragement of rural workers to perform all agricultural and land improvement operations punctually and well, curtailment of the periods of harvesting, storage and maintenance of agricultural products without losses, and reinforcement of order and discipline in every unit in order to carry out the plan tasks.

Article 3. The suggestions made at the meeting of the Legislative Chamber when the draft plan was discussed will be forwarded to the Council of Ministers.

Legislative Chamber of the People's  
Councils  
Chairman Vasile Barbulescu

Bucharest, 17 December 1985  
No 2

Council of Ministers of Romania  
Prime Minister Constantin Dascalescu

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CSO: 2700/90

POLITICS

ROMANIA

#### PEOPLE'S COUNCILS' TASKS FOR FULFILLMENT OF 1986 PLAN

Bucharest BULETINUL OFICIAL in Romanian Part I No 70, 20 Dec 85 pp 2-4

/Decision No 1 of 17 Dec 1985 of the Legislative Chamber of the People's Councils Approving the Draft Unified National Plan for Romania's Regional Socioeconomic Development for 1986/

/Text/ Upon discussing the Draft Unified National Plan for Romania's Regional Socioeconomic Development for 1986, the Legislative Chamber of the People's Councils finds that it is based upon the decisions of the 13th Party Congress, the policies and directions handed down by the administration, and the provisions of the approved special programs. The draft plan was analyzed at the meeting of the Political Executive Committee and discussed and approved at the Plenum of the RCP Central Committee and the Plenum of the National Workers Council. Moreover the plan tasks were discussed at the workers general assemblies in enterprises and centrals, in the management councils of the ministries and in the executive committees of the county and Bucharest municipal people's councils, and measures were adopted for proper preparations to implement next year's plan.

The whole effort to draft the plan was directly supervised by Nicolae Ceausescu, party general secretary and president of the republic, who analyzed the proposals for the entire economy, for ministries, for sectors and for each individual county in several stages, guiding the basic operations in directions toward unfailing fulfillment of the RCP Program for Building the Fully Developed Socialist Society and for Romania's Advance Toward Communism. The assigned tasks provide for further growth of the productive forces, development of agriculture and the domestic raw material base, technical and qualitative improvement of products, more intensive use of raw materials, the most efficient possible use of investment funds, more pronounced reduction of material and energy inputs, further recycling of recoverable resources, more pronounced growth of labor productivity and reduction of material outlays on behalf of steady growth of the national income and continued improvement of the public's living standard.

The provisions of the Unified National Plan for 1986 provide for a higher developmental rate than the original ones in the preliminary outline of socioeconomic development for 1986-1990, while emphasizing the qualitative aspects of all activities, and for a generally higher economic level and degree of civilization of

all areas and counties of Romania. Measures have been provided for more pronounced development of some counties in order to gradually attain the economic potential called for by the 13th Party Congress, so that by 1990 every county will have a per capita volume of economic activity amounting to at least 80,000 lei, 50,000 lei of which will be in industrial output. Rapid development of small industry and services in all counties has also been specified, in keeping with the provisions for 1986 in the programs approved by the Third Congress of People's Councils.

The Legislative Chamber of the People's Councils considers that the Draft Plan for 1986 ensures the intensive development of the national economy regionally and as a whole, the steady growth of the national income and, accordingly, the further rise of the public's standard of living and civilization in all areas and localities of Romania.

On grounds of Article 6a of Law No 5 of 1975 on the Congress, Legislative Chamber and Conferences of the People's Councils, the Legislative Chamber of the People's Councils hereby decides:

Article 1. The Draft Unified National Plan for Romania's Regional Socioeconomic Development for 1986 is hereby approved.

Article 2. In order to implement the Unified National Plan for Regional Socioeconomic Development for 1986, the people's councils will take measures for:

a) Regular implementation of physical production in the planned structure and of the tasks for commodity production, net production, technical and qualitative improvement of products, greater labor productivity, activation of the new investment capacities within the planned time limits, increased exports and reduced imports, further reduction of material and energy inputs, a definite start on the programs for training and retraining the labor force for all activities and stabilizing the labor force, and greater effectiveness in all activities;

b) More intensive scientific research, technological development and introduction of technical progress through development and improvement of new technologies to make better use of raw materials, raise the technical and qualitative standards of the output, and reduce material and energy inputs; implementation of new programs for automation, electronification and robotization of the production processes; more rapid growth of labor productivity and the general effectiveness of production; development and assimilation of new products and materials with better characteristics, new metals and materials for the machine building industry and especially the electronics and microelectronics industry, and new and highly productive machines and equipment; development of new and modern technologies and improvement of the existing ones, and exploitation of new sources of energy, fuels and synthetic motor fuels and of all categories of secondary energy resources;

c) Further implementation of the provisions of the Program for Technical and Qualitative Improvement of Products, Reduced Consumption of Raw Materials, Fuels and Energy, and Better Use of Raw Materials and Materials, in order to make products with high technical-operational and economic parameters making better use of raw material, material, fuel and energy resources and competitive on foreign markets;

d) Intensive use of production capacities through increased use of machines, equipment, installations and production areas; punctual technical-material supply of enterprises in the required assortments; consistent application of the programs for integration and specialization in production in accordance with the provisions of the Unified National Plan, and better cooperation among enterprises, centrals and counties;

e) Operation of hydroelectric and thermoelectric power plants at their planned parameters, use of fuels at their full energy potential, recovery and maximum use of recycled energy resources, and reduction of technological consumption in power plants and of losses of energy in the transmission networks;

f) Implementation of coal production and especially of the coking coal program as well as the tasks for petroleum extraction and increased recovery through firm measures to strengthen order and discipline in those sectors, and consistent application of the new overall contract system of remuneration;

g) Development of production in the processing sectors, with emphasis on increasing the processing products making better use of the metal and reducing imports; more diversified production structure of machines, equipment, installations and apparatus, and manufacture of products with good performances and high economic and operating parameters; manufacture of chemical products according to the consumer requirements of the national economy and the export trade, and manufacture of quality products in the wood industry and consumer goods industry through continued expansion of the assortments and improvement of product quality.

h) Implementation of the program for more pronounced development of small-scale industry in all counties and a considerably greater contribution to the public's consumer needs with small household articles and some construction materials, artifacts and handmade wares (as well as some for export) through exploitation of local raw material resources and some materials and by-products recoverable from industry and agriculture and use of the small-scale food and culinary industry, as well as a more pronounced development of urban and rural services;

i) Implementation of the provisions of the National Program To Obtain Certain, High and Stable Agricultural Outputs by enhancing the productive potential of the soil, better organization and use of agricultural lands, and irrigation, drainage and anti-erosion projects;

j) Strict observance of the crop structure and the areas allotted to the crops according to the plan provisions as well as the sowing periods and the densities per hectare according to law, and timely determination of the areas for highly productive intensive crops;

k) Completion of hydraulic engineering projects within the planned time limits, rational use of water resources, and application of environmental protection measures;

l) Efficient transport operations and determination of effective measures to cut fuel and energy consumption, and more intensive development of rail transportation with a considerable reduction in automotive transportation;

m) More prompt implementation and strict observance of the provisions on activation of the new investment capacities in accordance with the construction periods; performance of construction-installation operations and delivery of equipment according to the provisions in the schedules of the investment projects; expedited preparation of the construction plans for the investment capacities through full use of the facilities of the institutes for research, design and technological engineering; further use of standard, reusable designs; adoption of the most efficient technological and construction methods; expansion of mechanized and industrialized construction-installation operations and modern construction technologies; further reduction of operating costs; strict proportioning of constructions and wide-scale use of prefabricates, substitutes and local materials, as well as greater effectiveness of every leu invested or spent;

n) Strict observance of the schedules for maintenance, inspections and repairs; improvement and acceleration of those operations, and improvement of the technical-operational parameters and modernization of the machines, equipment and installations along with the capital repairs;

o) Exemplary fulfillment of the export tasks through priorities on starting manufacture and manufacturing exports; more intensive prospecting of the foreign markets and contracting with greater effectiveness; improvement of the varietal structure, and more rapid adjustment of manufacture to foreign market demands;

p) Implementation of the provisions of the special program for more pronounced labor productivity growth through measures to promote and extend technical progress, to improve organization of production and labor, strengthen order and discipline on every job, enhance all workers' sense of responsibility and participation in prudent and efficient management of the material and financial resources in units, and to train and improve the labor force professionally;

r) Strict conformity to the standards and regulations for consumption of raw materials, materials, fuels and energy; improvement of the coefficients of use of material resources, and reduction of technological losses and those in handling, storing and shipping products;

s) More intensive recovery and recycling of the materials from industrial processes and consumption by the socialist units and the public and reconditioning of worn materials, spare parts and subassemblies;

t) Strict application of the regulations on generalizing the overall contract system in the economic units in industry, construction-installation, agriculture, transportation and other sectors, and conformity to the wage funds computed according to law and in close correlation with growth of labor productivity, exports, net production and commodity output sold and paid for.

Article 3. In order to carry out the tasks assigned to the units directly under them, the people's councils will provide for:

a) Regular control and guidance of the small-scale industry units, providing for steady growth and diversification of production, increased exports and use of all resources in the counties according to their programs for 1986-1990;

b) Further implementation of the provisions of the National Program for Systematization of Territory and Urban and Rural Localities, for purposes of efficient use of the land through further restriction of the buildable limits and areas occupied by constructions in cities and villages; concentration of isolated villages and farms in large communes, and construction of dwellings with two to four levels in communes and promotion of architecture based on local traditions;

c) Tight control of enforcement of the Law on Systematization in planning and implementing all investment projects on the territory of every county, municipality, city and commune;

d) Application of new construction methods in designing dwellings; improved insulation of outer walls of buildings, and further use in construction of new and standardized materials and insulating materials made of local materials;

e) Prudent management and modernization of the state housing reserve and prevention of demolition of constructions;

f) Concentration of efforts on completion and activation of capacities under construction and especially of projects in connection with industrial units and housing construction;

g) Considerable development, diversification and improvement of services to the public in accordance with their demands, especially for maintenance and repairs of dwellings, technical-sanitary installations and self-service laundries and chemical cleaning establishments; improved geographic distribution of service units, and efficient use of the existing capacities;

h) More extensive mobilization of the public to implement municipal-administrative projects and maintain the road network, social-cultural capacities and other civic facilities.

Article 4. For further improvement of the public supply, the people's councils will provide for:

a) Complete implementation of the Program for Application of Measures for Regional Self-Management and Self-Supply in order to meet the public's rational consumer needs in every locality and county, with greater responsibility for complete fulfillment of the obligations to deliver agricultural products to the state reserve;

b) Proper distribution of the commodity reserve among localities, with a priority on large cities, workers centers and spas and health resorts; regular deliveries of commodities in the varieties and grades specified in the plan; more pronounced development of production of culinary preparations and semipreparations, and promotion of modern methods of serving the public.

Article 5. The people's councils will take firm measures to carry out their tasks for regional socioeconomic development, for good management and embellishment of cities and communes, for implementation of public projects, and for continued improvement of the public's welfare in all localities of Romania.

Article 6. The suggestions made at the meeting of the Legislative Chamber when the draft plan was discussed will be forwarded to the Council of Ministers.

Legislative Chamber of the People's  
Councils  
Chairman Vasile Barbulescu

Council of Ministers of Romania  
Prime Minister Constantin Dascalescu

Bucharest, 17 December 1985  
No 1.

5186  
CSO: 2700/90

POLITICS

ROMANIA

### PEOPLE'S COUNCILS APPROVE LOCAL BUDGETS FOR 1986

Bucharest BULETINUL OFICIAL in Romanian Part I No 70, 20 Dec 85 pp 6-8

/Decision No 3 of 17 Dec 1985 of the Legislative Chamber of the People's Councils Approving the Draft Local Budgets for 1986/

/Text/ Upon discussing the draft local budgets for 1986 at its meeting on 17 December 1985, the Legislative Chamber of the People's Councils finds that they provide for the incomes needed for proper financing of the tasks and objectives assigned to the regional-administrative units.

The local budgets for 1986 were drafted under the direct supervision and guidance of Nicolae Ceausescu, the RCP general secretary and president of Romania, who regularly analyzed the levels of the financial indicators for the local economy as a whole and for every separate county, guiding the entire activity in the direction of more pronounced gains in the effectiveness of all sectors, provision for and reinforcement of self-management, economic-financial self-administration and self-financing in all regional-administrative units, and a greater role and responsibility for the local organs of the state power and administration in implementing the plans for regional socioeconomic development and enlisting more citizens in the development, modernization and embellishment of the localities wherein they live and work.

The financial indicators were based on the main objectives specified in the documents of the 13th RCP Congress, those of the Joint Plenum of the National Workers Council and the Supreme Council of Economic and Social Development in June 1985, and those of the Third Congress of People's Councils.

The incomes and outlays of the local budgets for 1986 were correlated with the indicators in the socioeconomic development plan that pertain to the regional-administrative units, in consideration of the proposals in the budgets of incomes and outlays of the people's councils and the units under them, while the financial indicators were based on joint analyses with the representatives of the Executive Committees of the County and Bucharest Municipal People's Councils.

On grounds of the provisions of Article 6a of Law No 5 of 1975 on the Congress, Legislative Chamber and Conferences of the People's Councils and those of Article 199 of the Law on Finances No 9 of 1972 as amended and supplemented by Law No 2 of 1979, the Legislative Chamber of the People's Councils hereby decides:

Article 1. The draft budgets of the regional-administrative units for 1986, totaling 22,555,500,000 lei in incomes, 18,371,300,000 lei in outlays and a surplus of 4,184,200,000 lei, are hereby approved.

The local draft budgets for 1986 include the incomes from the units under the people's councils and the other incomes which, according to law, are paid into the budgets of the regional-administrative units, as well as their distributions according to the objectives of the Unified National Plan for Socioeconomic development to finance development of the local economy, social-cultural programs, the local state administration and other social and municipal-administrative requirements.

Article 2. Out of the surpluses in the regional-administrative units' own budgets for 1986, mentioned in Article 1, the executive committees and bureaus of the people's councils pay contributions into the national budget to the amount of 3,318,000,000 lei for the fund for general development of society as a whole and then form circulating funds for self-financing to the amount of 866.2 million lei.

Article 3. The outlays of the local budgets for 1986 also include a reserve of 304 million lei available to the executive committees and bureaus of the people's councils to be used on the terms specified in Article 217 of the Law on Finances.

Article 4. The Executive Committees of the County and Bucharest Municipal People's Councils will assign the financial indicators to component budgets and their own budgets according to the functions specified by the legal provisions and the tasks assigned in the plan for socioeconomic development to each regional-administrative unit under them, ensuring conformity to the indicators approved for each county and Bucharest municipality by the Law on the State Budget of Romania.

Article 5. The evaluations of incomes in the local budgets are minimum tasks to be accomplished, while the provisions on outlays are maximum limits that may not be exceeded.

If the internal incomes do not cover the outlays, the people's councils will limit the latter to the amount of the incomes.

Article 6. The executive committees and bureaus of the people's councils are responsible according to law for realizing the incomes that are paid into the national budget by the local state economic units.

They are also responsible for determining and collecting the sums due the national budget from the fee for use of state-owned lands, the tax on buildings and lands in the socialist sector, and the tax on the profits of mixed companies and on the incomes of foreign units operating in Romania. They are responsible as well for determining and collecting the insurance premiums by force of law.

Article 7. The local budgets are executed under the direction and control of the executive committees and bureaus of the people's councils, who are responsible for financial discipline and efficient use of the material and financial resources.

The executive committees and bureaus of the people's councils will analyze the implementation of the incomes and outlays of the local budgets and of the other financial plans monthly and quarterly. They will determine the necessary measures for complete fulfillment of the financial indicators.

They will also take steps for fulfillment of the tasks and aims of the Program To Strengthen Self-Management and Economic-Financial Self-Administration and To Ensure the Regional-Administrative Units' Complete Self-Financing, approved by the Third Congress of the People's Councils, so that every commune, city, municipality and county will cover its outlays out of its own incomes and contribute to the fund for general development of society as a whole.

Article 8. For purposes of complete fulfillment of the financial indicators, greater efficiency in all activities, and the regional-administrative units' complete self-financing, the executive committees and bureaus of the people's councils, the collective management organs of the local state units, the financial administrations and the banks will take measures for:

- a) Complete implementation of the plan in physical production, net production, commodity output sold and paid for, services and export tasks;
- b) More pronounced growth of labor productivity through better organization of production and labor, introduction and expansion of advanced technologies, further mechanization and automation of industrial processes, improved training and qualifications of working personnel, and reinforcement of order, discipline and responsibility on every job;
- c) Reduction of production costs, especially through more substantial reduction of inputs of fuel, raw materials and materials; further improvement in recovery and recycling of raw materials and materials; further use of local materials and unconventional energy sources; elimination of surplus, immobile and superfluous stockpiles in units, and accelerated rotation of circulating capital;
- d) Improvement of all enterprises' activities in keeping with the principles of the economic-financial mechanism, and greater profitability and realization of profits for all units, products and activities;
- e) Improvement of the economic-financial activity of the agricultural cooperatives, complete use of the land reserve, fulfillment of the crop and live-stock production plan, and payment by the agricultural cooperatives of the benefits from taxes due the local budgets, according to law;
- f) Greater efforts to set the local taxes and fees according to law and complete collection of them;
- g) More efficient use, with strict observance of the laws of the land and a regime of strict economy, of the funds allocated to agrozooveterinary programs, maintenance and repair of roads and bridges, maintenance, repair and administration of the state housing reserve, communal administration and other economic programs;

h) More efficient use of the allocations out of the national budget and the local budgets for social-cultural outlays, and more economical use of the existing raw-material base, application of a strict regime of economy, most efficient possible use of the funds allocated to the planned programs, elimination of any form of waste, and strengthened self-administration and self-management of the social-cultural units;

i) Enlistment of citizens in the implementation, through cash contributions and labor and according to law, of public projects specified in the plans for regional socioeconomic development, and organization of the collection and management of the material and financial resources obtained from the public's cash contributions.

Article 9. The executive committees and bureaus of the people's councils, the economic units, and local financial organs in collaboration with the organs of the Investment Bank will take measures to activate the investment capacities and to attain the planned parameters on time; to obtain their own resources to the planned amount in order to finance the investment outlays; to make efficient use, according to the legal priorities, of the allocations out of the national and local budgets to finance investment projects; to prevent and curtail immobilizations of funds in unfinished investment projects and equipment standing idle too long, and to strengthen order and discipline at construction sites.

Article 10. The executive committees and bureaus of the people's councils will take measures to tighten financial control, especially preventive control, over the use of budgetary funds and the units' own funds, and to increase the role and responsibility of the local financial staff and the chief accountants in enterprises and institutions for strengthening plan and financial discipline, observance of the laws of the land, and more efficient use of material and financial resources, with a strict regime of economy.

Article 11. The Committee on People's Councils Problems, the Ministry of Finance the banks and the local financial organs will help the executive committees and bureaus of the people's councils and the units under them to fulfill the plan tasks and the financial indicators according to the budgetary provisions, to carry out the tasks and aims of the Program To Strengthen Self-Management and Economic-Financial Self-Administration and To Ensure the Regional-Administrative Units' Complete Self-Financing, approved by the Third Congress of People's Councils, to make more efficient use of the funds, and to reinforce preventive financial control and order and discipline in expenditures of public moneys.

Article 12. The suggestions made at the meeting of the Legislative Chamber of the People's Councils when the local budgets for 1986 were discussed will be forwarded to the Council of Ministers according to law.

Legislative Chamber of the People's  
Councils  
Chairman Vasile Barbulescu

Council of Ministers of Romania  
Prime Minister Constantin Dascalescu

Bucharest, 17 December 1985  
No 3.

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SCIENCE AND TECHNOLOGY

HUNGARY

MOBILE MEASURING SYSTEM TO TRACE COURSE OF INDUSTRIAL ROBOTS

Budapest MERES ES AUTOMATIKA in Hungarian No 10, 1985 pp 365-369

[Article by Attila Bencsik, of the Donat Banki Machine Industry Technical College: "Mobile Measuring System to Test Tracking of Industrial Robots." The first paragraph is the Hungarian language summary of the article.]

[Excerpts] Testing methods serving to determine direct diagnostic characteristics are used for control of industrial robots during and at the end of manufacture and for take-over tests of prototypes and all units produced. The article describes a mobile measuring system based on the principle of stereoscopic triangulation which can be used in an industrial environment and which serves to determine the repeat precision of tracking by industrial robots. The author describes the metrological and mechanical structure of the testing device and finally discusses the program for signal processing.

The development of the sensor for the measuring system (MTA SZTAKI [Computer Technology and Automation Research Institute of the Hungarian Academy of Sciences]) took place taking a number of factors into consideration, thus:

- the sensor has a simple design;
- it has a measurement range suiting the size of the work space of a large number of industrial robots (max. 2,000 mm);
- transformation of movement into an electric signal results in an analog (measurement potentiometer) or digital (incremental code transmitter) output signal;
- it is simple to exchange code transmitter and measurement potentiometer; and
- the resolution of the sensor makes it suitable for testing the track of the majority of industrial robots.

With a Gamma precision wire potentiometer the resolution is 1.4 mm with a precision of plus or minus 0.07 mm. With an ANDIMIK-1-60-1000 turn-digital transformer with "fourfold" evaluation (MIKI [Instrument Industry Research

Institute]) the resolution is 0.05 mm with a precision of plus or minus 0.00002 mm.

The first application of a measurement system based on the principle of stereoscopic triangulation took place at the MTA SZTAKI within the framework of laboratory tests of the UNIMATE PUMA 600 industrial robot. A version of the system which can be used industrially was developed on the basis of the experiences acquired here.

Figure 2 shows the link between the sensor and the end point of the industrial robot arm: 1. robot arm; 2. steel wire; 3. case of sensor; 4. frame holding sensor; 5. incremental code transmitter; 6. axis coupling; 7. wire drum.

Figure 5 shows the instrument unit of the mobile measuring system: 1. power unit for the sensors; 2. coupling unit; 3. personal computer; 4. floppy disk unit; 5. printer.

#### Biographic Note

Attila Bencsik graduated from the Budapest Technical University in 1970. He then worked at the university as a scientific colleague, then at the Transportation and Telecommunications Technical College and now as assistant professor at the Donat Banki Machine Industry Technical College. Since graduation from the university he has cultivated various theme areas connected with automation. Between 1980 and 1984 he was a scholarship graduate student at the MTA SZTAKI. In recent years his research activity has been directed toward industrial robot diagnostics and related sciences.

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SCIENCE AND TECHNOLOGY

HUNGARY

#### TOOL CONTROL ON NC MACHINES

Budapest MERES ES AUTOMATIKA in Hungarian No 10, 1985 pp 370-375

[Article by Laszlo Horvath and Balazs Szabo, of the Computer Technology and Automation Research Institute of the Hungarian Academy of Sciences: "Tool Control on NC Machines." The first paragraph is the Hungarian language summary.]

[Excerpts] The article describes a tool control system for NC machines developed at the MTA SZTAKI [Computer Technology and Automation Research Institute of the Hungarian Academy of Sciences]. The task of the system is to provide complex protection of tools. This is done by checking tool geometry between processing operations, by watching the power consumption of the main drive in the course of the process and by observing the life expectancy which follows the wearing away of the tool.

The basic goal was to create a device which contained simple sensors which could be used under industrial conditions and which, carrying out all three control tasks, would be suitable for complex protection of the tool. We attached the system to the UNIMERIC CNC equipment of VILATI [Electric Automation Institute].

The system contains three essentially independent tool checking functions which can be built in or used separately. But the operation of the system is truly efficient with combined use of the three functions because all the functions supplement one another. The geometry check easily discovers breaks in tools of small size or a break resulting when there is missing material, which the load check is not capable of due to problems deriving from the character of the sensing. On the other hand the latter provides protection for the sensor and makes possible use of the more precise life expectancy checking methods. Further development of the system is necessary primarily in regard to the load check, by building in algorithms suitable for watching auxiliary drive signals or tool break signal forms. The sphere of services must be expanded and we must make it possible for the system to operate as part of a control subsystem.

### Biographic Note

Laszlo Horvath graduated from the Budapest Technical University in 1977, in the machine manufacturing technology section of the Mechanical Engineering School. Since completing the university he has been a colleague at the MTA SZTAKI Machine Industry Automation Main Department. He has taken part in themes connected with NC processing from the beginning. Since 1980 he has been dealing with questions of tool control for NC machines.

Balazs Szabo obtained his degree in electrical engineering at the Budapest Technical University in 1980, in the communications engineering section. He worked as a developmental engineer at the BHG Communications Engineering Enterprise for 2 years. He earned an engineering teaching degree in 1981. At present he is a scientific colleague at MTA SZTAKI. He deals with measurement and diagnostic problems in the area of machine industry automation.

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SCIENCE AND TECHNOLOGY

HUNGARY

#### CONTROL SYSTEM FOR MANUFACTURING CELL

Budapest MERES ES AUTOMATIKA in Hungarian No 10, 1985 pp 376-380

[Article by Gyorgy Asboth, of the SZIMFI (Developmental Institute of the Machine Tool Industry Works), and Eva Csibi, of the SZTAKI (Computer Technology and Automation Research Institute): "Designing a Control System for a Manufacturing Cell." The first two paragraphs are the Hungarian language summary.]

[Excerpts] The article summarizes the theoretical steps in designing an unsupervised manufacturing cell. Mechanical supervision replaces human supervision, and the need for sensing the state of the machine increases significantly. The transformation and processing of the signals given by the sensors and the place of control within the system are essential factors.

Correct operation of the system is realized only in a hierarchical order of control, supervision and diagnostics. The article attempts to show the mutual effects and linkage system of these design factors and to disclose the control-diagnostic strategies.

MTA SZTAKI and the SZIMFI are jointly designing a manufacturing cell to process box-type parts, a cell to be developed at the SZIMFI. Since we did not have domestic experience or examples in the initial period we had to solve a number of problems. There were no suitable sensors or controls, etc.

In this article we are dealing with the realization of an unsupervised system, the creation of a supervising and diagnostic system, and so we describe the course of the design work only from this viewpoint.

Compiling a requirements system constituted the start of the work. In it we formulated the demands to be made of the cell. (This work, and the later work also, is the achievement of a SZTAKI-SZIMFI team of three to six people.) Then we could begin to write the system plan, which we prepared with the SADT [structural analysis and design technique] method. This was the basis for working out the control technique system.

#### Biographic Note

Gyorgy Asboth graduated from the Electrical Engineering School of the Budapest Technical University in 1976. He has been working at the SZIMFI since 1976, as a research engineer. He dealt first with data processing for coordinate measuring machines and then participated in the development and installation of the DIAGON 500 manufacturing system built at the SZIMFI. At present he is dealing with development of manufacturing cells and manufacturing systems. He is secretary of the Diagnostics Committee of the MATE [Metrology and Automation Scientific Association].

Eva Csibi graduated from the Mechanical Engineering School of the Budapest Technical University in 1982. She has been working at MTA SZTAKI since 1982 as a scientific assistant. She has been dealing with unsupervised manufacturing cells from the beginning. Her narrower themes are diagnostic and expert systems.

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SCIENCE AND TECHNOLOGY

HUNGARY

### SIGNAL PROCESSING, DECISION MAKING METHODS IN MACHINE INDUSTRY

Budapest MERES ES AUTOMATIKA in Hungarian No 10, 1985 pp 381-386

[Article by Dr Laszlo Monostori, Computer Technology and Automation Research Institute of the Hungarian Academy of Sciences: "Signal Processing and Decision Making Methods in Machine Industry Status Supervision Systems"]

[Excerpts] In Hungary research and development connected with the supervision of machine tools or manufacturing systems is done in a coordinated way, within the framework of an OMFB [National Technical Development Committee] contract, by the manufacturing enterprises (SZIM [the Machine Tool Industry Works], the Machine Tool Factory of the Csepel Works, VILATI [the Electric Automation Institute] and DIGEP [the Diosgyor Machine Factory]), by the Machine Industry Automation Main Department of MTA SZTAKI [Computer Technology and Automation Research Institute of the Hungarian Academy of Sciences] and by university faculties (the Machine Manufacturing Technology Faculty of the Budapest Technical University and the Machine Tools Faculty of the Heavy Industry Technical University).

The development of special supervisory options (tool observation, vibration supervision) which can be integrated into CNC began in a cooperation of MTA SZTAKI and VILATI. The next step is the creation of complex subsystem supervisory equipment which integrates the above special modules with general supervisory algorithms.

In addition to research and development at the subsystem level we developed--within the framework of teamwork done with experts from the SZIMFI [Developmental Institute of the Machine Tool Industry Works]--a supervisory and diagnostic system plan for an unsupervised manufacturing cell for the manufacture of box-type parts. Realizing the cell is a task for the near future.

Solving and standardizing the programming questions for supervisory and diagnostic problems is a task requiring international cooperation.

The future certainly belongs to intelligent manufacturing systems which--making use of the most recent achievements of artificial intelligence research--must include an expert system which, constantly updating and expanding the knowledge base, will be capable of:

--automatically recognizing initial, partial, complete or catastrophic failures,

--automatically determining the operating modes which can be used optimally under the conditions of partial failure, and

--automatically taking care of maintenance planning.

#### An Expression of Appreciation

Beginning in October 1983 I spent a year at the Machine Tool Laboratory of the Aachen Technical College on a DAAD scholarship. Continuing the research I had begun at MTA SZTAKI I expanded the multiprocessor supervisory equipment conceived of at the faculty with digital signal processing and form recognition methods. I would also like to express my appreciation to Professor Manfred Weck and to Lutz Kuhne, chief of the Machine Tool Diagnostics Group, who made my work possible and gave it their support.

#### Biographic Note

Dr Laszlo Monostori graduated from the Electrical Engineering School of the Budapest Technical University in 1976, in the communications engineering section. As a special engineering student at the Theoretical Electricity Faculty he dealt with computer modeling of semiconductor devices. He won an honors degree in engineering in 1978. In 1979 he defended his university doctoral dissertation titled "A Two Dimensional Computer Analysis of the Stationary Flow Space of MOS Transistors." Since 1977 he has been a colleague at the Machine Industry Automation Main Department of MTA SZTAKI, at present in the position of deputy department chief. His research has extended to several areas of machine industry CAD/CAM--microprocessor control of machine tools and robots, development of integrated manufacturing systems and the design and processing of three dimensional surfaces. Since 1981 he has been dealing with machine industry metrological problems and machine tool supervision problems. Beginning in October 1983 he worked for one year on a scientific scholarship in the Machine Tool Laboratory of the Aachen Technical College.

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SCIENCE AND TECHNOLOGY

HUNGARY

COMNET '85: COMPUTER NETWORK SERVICES

Budapest SZAMITASTECHNIKA in Hungarian No 12, Dec 85 pp 1, 3

[Article by Dr Laszlo Kovacs and colleagues: "COMNET '85: Computer Network Services"]

[Text] The COMNET '85 international conference was held in Budapest between 1 and 4 October 1985, organized by the Janos Neumann Computer Sciences Society (NJSZT) and with the support of the IFIP, UNESCO, the ITU and the MTA [Hungarian Academy of Sciences], the OMFB [National Technical Development Committee], the Hungarian Post Office, the MAE and the HTE [Telecommunications Scientific Association]. The conference, taking place every 4 years, is part of the IFIP TC6 series of programs. The international distribution of the large number of participants (about 160 foreign and 140 domestic) reflects the fact that because of its geographical position Hungary is playing an important role in the area of East-West contacts and of scientific-technical contacts therein.

The theme of the conference, "services offered by computer networks," indicated the change in attitude which in recent years has left its stamp on scientific research and development in the area.

In economically developed societies it has become a major question today what communication services computer networks offer and who can make use of these services, how, in what form and at what cost. Research must answer the question as to which service systems offer the greatest social benefit given the existing hardware and software possibilities. Answering this question is not only a technical problem but also a social problem in the broader sense (standardization, organization, law, security, etc.).

Lajos Faluvegi, deputy premier and chairman of the Plan Office, opened the COMNET '85 conference.

The participants were greeted by First Secretary R. E. Butler on behalf of the International Telecommunications Union (ITU), by Director V. Zharov representing UNESCO, by Academician Tibor Vamos on behalf of the NJSZT and by Tibor Szentivanyi, chairman of the conference, in the name of the organizers.

The exhibit held in connection with the conference was opened by Ferenc Valter, director for telecommunications services of the Post Office. Mostly Hungarian enterprises and institutions displayed at the exhibit the results of their development and research related to the theme, generally in the form of demonstrations.

At the plenary session on the first day of the conference the invited speakers included R. des Jardins (USA) speaking on the past, present and future of the standardization of Open Systems Integration (OSI). Professor E. A. Yakubaitish (Soviet Union) described work at the Riga institute of the Soviet Academy of Sciences (IEVT) pertaining to standardization and realization of OSI. T. Irmer (CCITT) dealt with questions of international standardization for the ISDN. Professor H. Mauer (Austria), one of the most active representatives of Austrian videotex developments, called attention to the contradictions accompanying the development of videotex systems. Dr D. Rayner (England) described methods and problems in conformance testing of OSI protocols and the present status of international standardization in the area.

The conference was given an interesting timeliness by the fact that the principle of packet switching is exactly 20 years old. Donald W. Davies (England) whose name (together with that of Paul Baran, USA) is linked to this basic principle of packet switched computer networks, was a guest of honor at the conference. A touching moment of the conference was when D. W. Davies was awarded the Neumann Prize on the occasion of the anniversary, Davies giving a talk on the past and future of the development of computer networks.

Then COMNET '85 continued its work in eight theme areas:

- General problems in the use of computer networks and questions of network services;
- ISDN, telematic and public data networks;
- Design and realization of local networks;
- Network architecture questions;
- Formal description methods and protocol verification;
- Protocol testing, network testing and conformance studies;
- Social problems of using networks; and
- Other special theme areas.

The speakers on general problems in the use of computer networks included R. A. Rosner (England) discussing networks operating in a university environment. L. J. Varszegi (Switzerland) described use of the DATA-STAR database service via a network. Professor H. W. Meier (GDR) analyzed experiences with the DELTA network. M. Bazewicz (Poland) described the design, realization and services of an academic network. L. Csaba (MTA-SZTAKI [Computer Technology and Automation Research Institute of the Hungarian Academy of Sciences]) reported on the cooperation taking place between MTA-SZTAKI and the Vienna Technical University in the area of computer networks.

The speakers on telematics included J. Gecsei (Canada) who analyzed videotex applications of the ISO file access protocol. J. Sebestyen (Austria) talked about use of the MUPID terminal. He described a service based on a teleprogram by means of which the MUPID terminal offered a way to copy from a large,

structured information videotex database and make high level local queries not requiring a telephone connection. L. Kovacs-Pusztai (PKI [Postal Experimental Institute]) spoke of the contact and access limitations characterizing videotex systems. He listed technical deficiencies which today make difficult the access of public and closed videotex systems. H. Kunze (FRG) gave two lectures. In his lecture concerning videotex he described system technique aspects of a public service introduced in the FRG under the trade name Bildschirmtext. In his talk he touched on certain problems in the international cooperation of videotex services. He described in detail the technical solutions used to link French and West German services and touched on the access limits which proved ineluctable due to the system technique and display differences of the two systems. In his talk dealing with ISDN he described detailed technical ideas. He outlined how to fit "non-voice" services into a system and indicated trends for further development. S. Mazon (PKI) devoted his lecture to stumbling blocks in developments based on the ISDN concept. He noted the twisting nature of the path leading to ISDN and recalled the importance of infrastructural bases. He spoke of principles and practice and the complex contradictions of them. A. Filip (BME [Budapest Technical University]) discussed the problems of cooperation between ISDN and personal computer networks. G. Nemeth (BME) dealt with the architectural limitations of the ISDN concept. Speaking of practical work he described a pilot experiment in Hungary. H. G. Gabler (FRG) called the attention of the audience to a number of theoretical and practical problems. He gave a very basic report on postal experiences connected with development and operation of the Datex-P network. He seasoned his lecture with detailed traffic statistics. P. Horvath (PKTH [Postal Central Telegraph Office]) spoke of ideas connected with data network and value increasing services of the Post Office. He described the technical characteristics of an experimental packet switching system which is being installed. He touched on aspects of realizing network cooperation.

Two problem areas recognized in the course of standardization--problems having theoretical aspects too--received a significant place at the conference: the formal description of protocols and checking to see that implemented devices operate according to the protocol.

Working in two directions the ISO has developed two language specification proposals (ESTELLE and LOTOS) for a uniform formal description of protocols. At the initiative of Professor A. Danthine (Belgium) a lively debate developed in this section of the conference regarding the future of the two language proposals.

M. Steinacker (FRG) compared the language proposals (SDL and ESTELLE) serving formal description of the CCITT and ISO protocols. He said that work directed at bringing the SDL and ESTELLE languages into a common form was a chief task of the period ahead. B. Sarikaja (Canada) defined the normal form specification of protocols and demonstrated an algorithm which creates such a normal form from the ESTELLE specifications. A normal form for a specification significantly facilitates the execution of protocol validation operations. The lecture by E. Brinksma (Holland) and G. Scollo (Italy) on the basic principles for the development of the LOTOS language was well received. The detailed description of the LOTOS specification language was given within the framework

of a seminar held in parallel with the conference (E. Brinksma). T. Y. Cheung (Canada) described a program system based on the method of Petri nets which serves to validate protocols. Systems making possible protocol verification had a great role at the conference. L. Kovacs (MTA-SZTAKI) described a verification system based on MODULA-2 and R. Groz (France) described one based on Pascal. H. Konig (GDR) reported on work being done in the GDR aimed at developing a system to facilitate protocol design. J. Szentner (Videoton) outlined the chief stations in the design and realization of the transport protocol developed for the EXLOC local network.

Lectures on the theme of protocol testing included a talk by V. Carchicolo (Italy) on a system serving automatic production of test sequences from a LOTOS language specification. R. Castanet (France) described another method of producing test sequences. O. Rafiq (France) described a linguistic formalism making possible the description of protocol test sequences. G. Vogt (FRG) described the development of the PETRUS test center and its use for the purpose of testing protocol conformance.

Local computer networks were forced literally to the periphery of the conference (to the afternoon of the last day) which did not help the cultivators of the theme to find one another quickly but substantively the lectures were not at all of a peripheral character.

In separate lectures for each we could hear about a local network developed in Dubna (P. Giese, Soviet Union), a local network being developed at the Wroclaw University (L. Borzemski), a local network architecture developed at the Dresden Technical University and used in different transmission speed media (H. Loffler) and the EXLOC local network of Videoton which is being developed (P. Sugar).

These local networks using customary technology, however, are separated by a generational difference from the local network described by R. Yatsuboshi (Japan). This network uses fiber optics as the data transmission medium and has a data transmission speed of 560 M bits per second (!).

It illustrates the maturity of local networks that in addition to the architecture lectures there were lectures which studied the capacity of the networks from the viewpoint of the user. R. Tasker described measurements on the Ethernet used for experimental data collection at the Physics Laboratory in Daresbury, England, while F. Telbisz reported on a series of measurements pertaining to the capacity and data transmission speed of the LOCHNESS local network in operation at the KFKI [Central Physics Research Institute]. K. Kellermayr (Austria) reported on a software package developed at the Linz University to simulate a local network and on the utility of it.

Taken as a whole COMNET '85 offered a comprehensive picture of the present domestic and foreign status of the discipline. In addition to reporting on achievements great emphasis was given to the problems to be solved in the future, and not only the technical tasks. Thus one of the most important results of the conference is that it showed the possible directions for further progress.

Remarks by Lajos Faluvegi

In his opening speech Lajos Faluvegi, deputy chairman of the Council of Ministers and chairman of the National Plan Office, emphasized that the exchange of scientific and technical information and regular meetings of the scientists and experts of different countries in the service of this are outstandingly important areas of the flow of information. The Hungarian People's Republic is always happy to host international conferences of scientific organizations--satisfying also the recommendations of the Helsinki closing document signed 10 years ago this year--because we would like our capital to become one of the centers of international professional, scientific and cultural contacts. Speaking of the theme of the conference the deputy premier noted that the forging ahead of informatics activities already characterizes--after some phase delay--the Hungarian economy of the 1980's as well. A further build-up and development of information networks on the basis of the technical-scientific results achieved in the areas of microelectronics, computer technology and telecommunications are indispensable to assure the further development and future competitiveness of our national economy. It is an important task of the years ahead to spread and develop to an ever higher degree the application of the technologies which are the hallmark of our age and to shorten the time in which they are linked into the circulation of the economy and society. When working out the developmental program for the 5-year plan beginning in 1986 a number of aspirations were formulated which serve these goals. Before all else we want to aid the broad application of microelectronics and information technology, and in our industrial policy also the development of efficient production serving the spread of electronics will receive a greater impetus than before.

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SCIENCE AND TECHNOLOGY

HUNGARY

SEMINAR ON "INFORMATION ECONOMY"

Budapest SZAMITASTECHNIKA in Hungarian No 12, Dec 85 pp 1, 3

[Article by Jozsef Szabo, KSH, Computer Technology Applications Main Department: "Seminar on the Information Economy"]

[Text] Participants at a seminar held in Budapest, under the auspices of the KSH [Central Statistics Office] Computer Technology Applications Main Department and the MTA [Hungarian Academy of Sciences] Economic Sciences Institute, debated a new sort of theme.

The subject of the seminar was the information economy, discovering the characteristics, methods of measurement, development of activity and economic-social effect of economic activities which can be treated together on the basis of common criteria. In addition to lectures examining the common, general economic peculiarities of information activities the speakers also outlined the economic characteristics of the several information branches--computer technology applications, telecommunications, cultural activity, library activity and the mass media.

Twentyseven talks were given in the 2 days. The concentrated program made it possible for the participants to form a comprehensive picture of the domestic status of information economy studies and of the results of research which has begun in the several information branches. The talks given were not published as concluded research results but rather had the character of a search for paths--and the debates which sometimes hotly flared at the seminar indicate this. They support shop work the goal of which--as was emphasized by Lajos Pesti, deputy chairman of the KSH, in his opening statement--is to provide the leaders of the people's economy an opportunity to evaluate the character and effect of the changes taking place in the economic structure and to better coordinate this process. And this task in turn cannot do without ideas about the information economy which are theoretically well founded and supported on statistical data.

The organizers of the seminar also want to aid the evolution this shop work by publishing a collection of studies selected from the lectures.

Lectures dealing with general questions of the information economy were given on the first day of the seminar. The keynote was given by the opening talk of

Lajos Varga (KSH). In it he reported on the first results of studies begun at the KSH in 1983, on the magnitude of the information economy as indicated by macroeconomic indexes and on the dynamics of development. Mihaly Agoston (OMIKK [National Technical Information Center and Library]) confirmed the need for an information economy approach by noting the status of technical information activity and its practical effect on technical development.

The uneven national development of information economies and the fact that information activities have become global have induced political questions as well which seriously affect even the cause of national sovereignty. Thus we must examine, among the social consequences of information activities, the political effect of them and the relationship of power to information activities, stated Ervin Gombos (KSH) in his talk. Gyula Barna (KSH) examined the connection of the information economy and economic growth within the framework of a growth model--based on the theory of S. Kuznets pertaining to the sources of long-term growth--and showed the close link between the information economy and the sources of growth. The talks by Laszlo Pal (OMFB [National Technical Development Committee]) and Gyorgy Marosan Jr (MSZMP Central Committee) dealt with the tool side of mechanizing information activities and the technical conditions for it. The speakers discussed the development of information techniques, the goals of the electronics program and the link between "electronicization" and the information economy.

Methodological questions of statistically measuring the information economy were central to the talks following this.

Jozsef Szabo (KSH) related the social and economic role of information activities to the increase in value of knowledge as property and to the development of key information technologies in the broad sense and he outlined the sphere of macro-level information statistics indexes which are suitable for characterizing the information economy. The talk by Istvan Dienes (KSH) dealt with the natural measurement units and computation methods for information property and trade. Order of magnitude calculations made according to the proposed method already provide a basis for a number of conclusions which pertain to order of magnitude differences in the information property embodied in human manpower and information products, to the distribution of information property according to ownership, and to the link between human and machine capacity in regard to information trade.

In his talk Tibor Sebestyen (Services Research Institute) reported on the result of manpower forecasts in regard to information employees and the information economy, generalizations which can be drawn from the individual forecasts and the methodology for summing up the forecasts. In his talk Laszlo Harsanyi (KSH) discussed the methods for measuring the performance of the information economy and a way to fit it into the national economic balance system. He stated that the calculation could be done from the present balance system supplemented by minor estimates--also used in other balance calculations.

The other talks at the seminar discussed unique economic questions of the individual information branches and the connection of the information economy. In this area a number of speakers dealt with operational questions of computer

technology use and conditions for improving efficiency. Jan Ehleman (Czechoslovakia), Gerd Wahner (GDR) and Ede Schuszter (MKKE [Karl Marx Economics University]) emphasized the necessity of an economics of machine data processing activities; Mrs Bela Csendes (Ministry of Finance) noted the developmental trend for economic regulation of the activity. It is a precondition for being able to trade in software products that there be suitable quality studies and documentation of them and that they be evaluated in an overall way. In his talk Istvan Eszes described a system for this developed at MTA SZTAKI [Computer Technology and Automation Research Institute of the Hungarian Academy of Sciences].

Geza Somogyvari (OKISZ SZSZV [an organization of the National Federation of Artisan Cooperatives]), dealing with questions of enterprise information management, called attention to the fact that information activity must be handled in a complex manner; we must turn our attention to reproduction, library and documentation tasks as well as computer technology. More efficient management of information property (software, data files, etc.) is a fundamental interest for an enterprise. Jozsef Tanko (ASZSZ [State Administration Computer Service]) concluded that the value of the data files of basic state administrative records well exceeds the value of the computers and software used to operate them. This survey, which the author introduced with an analysis of the basic records, suggests that this value difference should be taken into consideration in computer technology investment decisions.

Zsuzsa Szentgyorgyi (MTA) analyzed the status of computerized information processing in scientific research and noted the increasing gap between needs and possibilities.

Andras Schubert and Andras Telcs (MTA) characterized the effectiveness of basic research with a citation index for publications activity and evaluated the results of domestic research in terms of an international comparison.

A lecture by Krisztina Heller (MP [Hungarian Post Office]) and Ferenc Nadassi (Ministry of Industry) described a developmental strategy for telecommunications in our country, which is certain backward, on the basis of a value analysis of information.

The talk by Gabor Koncz (Ministry of Culture) and Eva Kuti (Culture Research Institute) dealt with timely questions of the cultural economy. Both confirmed the necessity of developing an economics of culture which would fit into the framework of the economics of information and they analyzed the economic guidance problems of the cultural branch.

Mrs Alajos Varga (KSH) described changes in the production of cultural information and in the consumption structure for it over the past 25 years. An interesting feature of the talk was that she described the information content of the several activities in hour equivalents.

In their talk Andras Szekfu and Zoltan Jakab (Mass Media Research Institute) described new techniques of mass communication and the shift, in many cases, of new techniques from the original amusement purpose toward a production

function. It was also shown by their studies that investments by the populace for access to the mass media are many times greater than the investments of the services.

The talk by Imre Marko, Peter Horvath and Tibor Futala (OMIKK) described the several economic functions in a system of information activities based on a library system--collecting information, providing information in the classical sense and the production of problem-oriented, theme-centric information.

The chief lessons of the seminar (as was emphasized by Lajos Varga in his closing remarks) are: an exchange of ideas has begun to discover the common economic peculiarities of information activities; the majority of the participants took a stand for the utility of an information economy approach; statistical foundations for the studies are absolutely needed for further analyses; and, finally, the seminar contributed to the clarification of basic concepts in the debate.

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SCIENCE AND TECHNOLOGY

HUNGARY

## TACHOMASTER SYSTEM FILLS TRANSPORT INDUSTRY NEEDS

Budapest SZAMITASTECHNIKA in Hungarian No 12, Dec 85 p 4

[Article by Dr Aladar Heppes and Endre Somos: "The TACHOMASTER System, a Software Development on Foreign Order"]

[Text] Talks between the English ICL and SZAMALK [Computer Technology Applications Enterprise] began in 1982 in the hope of both hardware and software business. The applied mathematics main department of SZAMALK was interested in preparing applications programs--in accordance with its profile. In preparation for later closer cooperation the ICL first ordered the TACHOMASTER program, in connection with an earlier system.

Since the program had to run on a computer as yet unknown in Hungary, the ICL DRS-20, two workers of the main department first became acquainted with operation of the microcomputer on the spot and, in cooperation with local experts, prepared an outline plan for the program system.

After the contracts were signed preparation and realization of the detailed system plan took place in Budapest on a two work station DRS-20 computer owned by the ICL. Finally, taking into consideration all the requirements arising subsequently as well, the last modules were delivered at the beginning of 1984.

### The Task To Be Solved

TACHOMASTER provides enterprises involved with transport and haulage efficient assistance in checking how truck drivers are adhering to the general job prescriptions and the extent to which a given vehicle park is used.

A serious need for the preparation of such a program package arose in Great Britain in 1981, for at this time there was an ordinance obliging owners of freight transporting vehicles to keep precise and up-to-date statistics going back one year in regard to when they did what work and whether the general job prescriptions had been violated.

To do this the trucks had to be fitted with a device called the "tachograph" into which a new "blank form" had to be placed each day, giving serial number and data on the driver and route, and the device would prepare a diagram

showing the speed of the vehicle at all times and the activity of the driver when the vehicle was stopped. Then, analyzing the "tachogram" thus produced, all the desired data could be obtained.

Manual processing of the tachograms itself takes an extraordinary amount of time and an additional difficulty is checking the quite large number of job prescriptions. In addition, one part of the job description pertains to a period of 1 or 2 weeks, so the earlier data always have to be watched too. Thus it obviously would be worth while to put the entire system on a computer.

The program package could have yet another advantage. The ICL already had a system called PATHMASTER with which one could plan the goods to be carried and the routes to be followed by individual trucks on the basis of the orders received. Using both systems the parameters of the planned deliveries could be compared with data on trips actually made, which the TACHOMASTER system would provide.

#### The Hardware Environment

TACHOMASTER was prepared for the ICL DRS-20 (Distributed Resource System) computer family. These are professional microcomputers which can very easily be linked into a local network or connected to another larger ICL or IBM machine.

The DRS-20 family consists of three models:

Model 50 has a built-in Winchester type disk unit;  
Model 40 has 2 x or 4 x 1 M byte floppy disk drives;  
Model 10 is an intelligent terminal.

The DRS-20 microcomputers can operate in two modes. In the "Native Mode" the processor and operating system are working based on its own architecture; in the "Retained Mode" it is compatible with the earlier ICL 1500 series. Considering that PATHMASTER ran on the 1500 series the TACHOMASTER system was prepared in the "Retained Mode", in the COBOL language.

#### Structure of TACHOMASTER

The conversational, menu controlled system developed to take care of the proposed task consists of the following main parts: master file maintenance, tachogram data input, processing (analysis), queries and lists.

#### Maintenance

We find four types of master data in the system all of which, naturally, can be updated.

The first two contain data on vehicles and drivers respectively; in the third we find variable data on conditions (rules) to be checked (for example, how many hours or kilometers one can drive without a rest); finally, in the fourth, we store those texts which, in the event of a violation of the rules, we want to display on the screen or list.

## Data Input

In the interest of having the TACHOMASTER program be more widely utilizable we provided three ways to enter the daily data. The most general is direct data input via the keyboard. This, however, is relatively cumbersome. In addition the program supports use of two semiautomatic tachogram readers widely used in England; substantially greater processing speed can be obtained with these. In the course of entering each record the program makes a number of formal and substantive checks in the interest of seeing that later processing meets only with valid--if not absolutely perfect--data.

For example, the program will not accept incompatible time data. Thus a significant number of data errors can be eliminated or corrected when being entered.

## Processing

The program analyzes the records not previously analyzed individually and in their interdependencies, selecting an analysis of data entered and a comparison with the rules. During the run the screen contains information pertaining to the record being studied or to the entire processing, and finally we get a summing up. All this can be sent directly to a printer also.

## Querying

We can request various compilations concerning the data in the system and each time we can decide whether the screen display is sufficient or if a printed list is also needed.

The choice of lists is as follows: statistics on rule violations, vehicle data, rules (data), driver data, driver job performance data and tachogram data (deletion).

In most cases the desired item can be further refined through responses given to submenus and questions. For example, we can ask for a list of those drivers who violated some rule in the given time period or we can list all those tachogram records which come from a time later than a given time period, which have already been analyzed but not yet listed.

Summary lists prepared by driver are used primarily to review the work of the drivers (usually they are prepared every 2 weeks) and they are signed by the driver.

From time to time it is useful to delete old records to relieve the burden on the system. This can be done individually or by groups as a function of date or other parameter.

Another possibility of the system is cumulative statistics, which can pertain to a given week or the entire period stored.

## Operation, Experiences

Naturally when putting the system into operation the chief task is to create the master files, which is done by using TACHOMASTER. In the future we have to deal with these data files only in the event of changes.

Operational use means primarily entering the daily data and printing out a few lists; a small volume of querying and the data changes which often follow add to this. The larger part of the analytical processing and listing is done on a regular basis weekly or biweekly.

On the DRS 20 Model 50 machines capacity remains to run other systems in addition to TACHOMASTER and PATHFINDER.

The customer, ICL, introduced the TACHOMASTER program package first at its own enterprise, ICL TRANSPORT, doing hauling in England with about 50 trucks.

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### MICROCOMPUTERS IN SERVICE OF RAILROADS

Budapest SZAMITASTECHNIKA in Hungarian No 12, Dec 85 p 4

[Article by A. K.: "The Railroads and the Micros"]

[Text] The computer technology group of the Szeged organization of the Transportation Sciences Association just held a conference titled "The Role of Personal and Microcomputers in Guidance of Railroad Operations" at the House of Technology in Szeged. In September the electronics conception for the Seventh 5-Year Plan of the Transportation Ministry was approved at the ministerial level.

Gyorgy Tatai pointed out on behalf of the Ministry of Transportation that it is less and less imaginable to carry out transportation tasks economically without a complex information background and a modern system of devices for it. At present the spread of electronics in the area of transportation is minimal. This must be changed on an urgent basis. The exchange of the obsolete data recording machines must be completed at the beginning of the new plan period and the acquisition and use of microcomputers must be coordinated by branch guidance in an appropriate form. In regard to personal computers it is justified to use primarily 16 bit professional computers which can be linked into local and large networks. A rational solution of software supply and the leasing of ready to go systems will continue to be a stressed task of the branch program. An accelerating spread of other category PC's between 1986 and 1990 can be expected on the basis of enterprise plans. At present about 400 microcomputers are in operation in the area of the branch. It is characteristic of the development that during the last year the number of computers doubled. In the area of software products micro software has not yet truly become a commodity; developers still regard it as secondary to create marketable products from their solutions.

It is possible to reduce the informatics backwardness of transportation compared to developed countries primarily by intensive use of available transportation tools and by coordinated developmental work in this area by interested transportation organizations. He also said that during the Seventh 5-Year Plan the extension of a decentralized processing system in the modernization of railroad guidance and enterprise management will be an important task together with a further development of elements of the central transportation guidance system. Dr Gyula Varszegi, deputy director general of the MAV [Hungarian State

Railways], emphasized that it appears useful to favor primarily computer technology developments which have an operational and commercial purpose, bring practical results and provide a foundation for economic decisions.

Mini and microcomputers were linked into the computer applications program very early at the railways. Small computer systems suitable for controlling marshalling yards have been used in Komarom since 1977, in Hegyeshalom since 1980, in Miskolc since 1981 and in Hatvan since 1982. Among other things these have the task of preparing the marshalling plan and car assembly, telling where the cars are located and keeping current records on cars arriving from abroad. The Szeged directorate of the MAV has achieved good results especially in developing a computerized data processing system for border rail stations. Car data are evaluated extraordinarily quickly with the microcomputer at Kelebia and as a result the time cars stay at the border station has decreased. There are a number of other tasks--primarily at some provincial directorates--which could be solved by local use of personal computers through decentralization. For example, such tasks include keeping records on locomotive shed repairs, keeping track of locomotives, preparing work time schedules, cost accounting and other administrative tasks.

Several people stated at the conference that an end must be put to superfluous parallelism in use of personal computers by the railroads and that even when using cheap PC's it is necessary to report what sort of task the computer is wanted for, and what sort of machine and what sort of software is desired.

According to the ideas for computerization in the railways' Seventh 5-Year Plan it will be necessary to put small or personal computers into operation at about 50-60 places in local systems at the lowest level in order to make the complex transportation control system work. These local systems are expected to be installed in 1989-1990.

During the 2 day conference a professional exhibit was held in the House of Technology in Szeged. The majority of the 14 exhibitors demonstrated Commodore-64 applications (for example, a traction information system, railway administration and traction applications, use of a teletype center as terminal equipment, etc.).

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SCIENCE AND TECHNOLOGY

HUNGARY

### NEW REMOTE PROCESSING POSSIBILITIES

Budapest SZAMITATECHNIKA in Hungarian No 12, Dec 85 pp 5, 9

[Article by Katalin Bars, Gabor Horvath and Tamas Sandor: "New Remote Processing Possibilities at the SZUV"]

[Text] Since the end of the 1970's the Budapest Computer Center of the Computer Technology and Business Organization Enterprise (SZUV BSZK) has been dealing with a broad adoption of remote processing techniques. In the beginning the device base necessary for this was represented by the MPMX051 multiplexor of the SZKI [Computer Technology Coordination Institute] and a few terminals emulating the 2780 algorithm (VDT 52100 and TAP-34). This was soon expanded with elements of the Polish TELE JS system based on an ESZ 8371 programmable control unit. The further developmental ideas of the SZUV were based primarily on this latter equipment.

As an extension of the batched processing tradition already significant then the first thing to do was to create a possibility for RJE type TAF [remote processing] operation and then to make operational use of it. Even today this is an essential element in the remote processing services of the SZUV BSZK.

The process of building up an ESZR [uniform computer technology system] online environment was significantly accelerated by acquisition of the GUTS and SHADOW II program packages. A modern possibility for conversational program development became available at the same time as making use of GUTS. The programmers learned to operate and like GUTS very quickly; the system became popular and is virtually indispensable today.

At the same time, getting used to SHADOW and bringing it to the users required a good bit more preparatory work. This is natural, because a general purpose online database management (DB/DC) system--which SHADOW is--is only a framework in itself which is made "alive" by the user programs which have to be written. And for every DB/DC system the user programs are more or less terminal dependent; that is, the structure of the program rests on the properties of the terminal equipment being used. For this reason it was necessary to decide first what sort of terminals the SZUV BSZK would undertake to serve. It seemed obvious that SHADOW should support the existing equipment (IBM 3270 and 2780) but at the same time it became necessary to serve a cheap, easily obtainable and simply programmable terminal, namely a terminal using

the viewdata (teledata, Bildschirmtext) system. This terminal consists of a common, commercially available color television set and an adapter which can be connected to it--these are manufactured in series here also--and it is capable of communicating with a distant computer via a traditional connected telephone line. The viewdata adapter used is the Orion VTX-960. But it represented a big problem that the viewdata terminal works with an entirely "particular" data transmission algorithm, in other words it is not compatible with any IBM or ESZR terminal. So first interfacing the viewdata terminal had to be solved via an ESZ 8371 control to the SHADOW monitor. The SZUV asked experts of the Network Remote Processing GMK (economic work association) to perform this task.

The first step was to solve the problem of serving the viewdata terminal within an ESZ 8371 emulator program. Here the basic difficulty was that the terminal receives or transmits data at a different speed, using the so-called reverse channel of the modems. The emulator program (EP) is not capable of such a protocol control, so in the system realized the data link between the terminal and the multiplex channel of the computer is established via a special connection of a two line unit. The second step was to make this dualism disappear by means of software; on the one hand the writer of a SHADOW user program should be able to write his program as if it were "serving" a simple teletype device; on the other hand he should not have to deal with the nature of the data transmission. This was achieved by matching an interrupt handling routine, by modifying the SHADOW teletype control modules, so that the terminal set standardized in SHADOW was expanded to serve a viewdata terminal.

On the basis of the possibility thus created the programmers of the SZUV prepared a framework system with the aid of which it is easy to send an optional pre-programmed screen series to the terminal--selected on the basis of the appropriate menu. Using the services of this framework system we have thus far prepared a user program providing information on MALEV [Hungarian Air Transport Enterprise] schedules and IBUSZ [Tourism, Procurement, Travel and Shipping Company] tours, but on the basis of the same principles there has been successful use of a set of programs with which various types of information could be obtained concerning the development of election results from television sets placed in the Parliament building on the day of this year's elections.

Another problem arose when serving terminals with the IBM 2780 algorithm within SHADOW. The original IBM prototype was designed as a remote batched operation terminal to pass on or receive large volumes of data. For this reason the microcomputer emulations (TAP-34, M08X, Proper, VT-20/30, Floppymat, Quadro, etc., to mention only some domestic ones) most often use this algorithm to transmit data files. The 2780 service originally provided in SHADOW also takes this batched mode as a base. At the same time the peripheral assortment for microcomputers is a good bit broader than the original IBM 2780 card reader-printer-punch assortment. So a need arose to make it possible to communicate with a transaction oriented, conversational mode TAF monitor in the conversational mode with the aid, for example, of a display and keyboard. To do this it was necessary to expand the possibilities previously provided in

SHADOW for serving 2780. The SZUV also solved this task in cooperation with the Network GMK.

A linking program was prepared as an integral part of SHADOW. This retains the original batched mode service and based on this it makes possible conversational programming in accordance with the 2780 algorithm. Thus in a way exactly similar to other terminals it is possible to start transactions and display screens in the form of questions and answers.

Another new service is that now real connected line operation is possible via the ESZ 8371 control or the linking program. This means that the computer is capable of receiving calls and building up the proper connection, conducting communications, and disconnecting following a terminal command, without any operator intervention.

With the conclusion of the above developments and putting them into regular use the SZUV BSZK hopes to be able to satisfy the needs of present and new customers to an increased degree over a broad range.

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SOCIOLOGY

GERMAN DEMOCRATIC REPUBLIC

### INTELLECTUALS' PRIVILEGES UNDER SOCIALISM DEFENDED

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[Article by Dr Frank Adler, of the Institute for Marxist-Leninist Sociology of the SED Central Committee's Academy of Social Sciences: "The Socialist Performance Principle in the Dialectics of Social Equality and Differentiation"]

[Text] The socialist performance principle is deeply anchored as a positive value in the consciousness of the working people of all social groups in the GDR. Implementing it conforms with their ideas of social justice and is linked with such expectations as employment in line with skills, competent evaluation, and a fair recognition of achievements. The practical attention to diverse abilities and performances in the labor process also strongly affects the more prominent need for the social recognition of individuality. Effective sanctions against occasional manifestations of abusing social accomplishments and better opportunities for making a living according to needs may be regarded as important conditions for the stimulating effects of the performance principle. That was once again reiterated at the 10th SED Central Committee session.<sup>1</sup> Particularly also, members of social groups directly responsible for scientific-technological innovations have detected a significant reserve for the needed performance improvements in the consistent and all-inclusive implementation of the performance principle. From that aspect they are advocating clear performance-related differentiations in incomes and occupational development.

Sociological surveys, however, also reveal that the margins and requirements for an effective recognition of capacity and performance differences in the developmental stage in which our society currently finds itself are not adequately exploited. There is also another circumstance that is playing a part: The affirmation of the performance principle, the recognition of its necessity, justice, and performance-promoting potentials, does not relate to all conditions and consequences of its being applied alike. Questions also are sometimes raised here as to how much the possible social consequences of the performance principle might be compatible with other social targets, values, and principles in our society.<sup>2</sup>

Indeed, the experiences in those collectives and sectors where the performance principle is being consistently applied show this to be a contradictory and complicated process. Nor do other views, in which enforcing the performance

principle or the social consequences linked with it and the development of other goals, values, or impulses of our society are conceived as "alternatives," as it were--such as a higher level of social equality only at the expense of the effectiveness of the performance principle or vice versa--meet the real dialectics and the practical requirements. Needed is, for one thing, a more precise theoretical social and ideological penetration of the qualitative aspects of the fields of contradiction--alluded to in the questions referred to above--in which the enforcing of the performance principle objectively occurs under prevailing conditions. And then also it is a matter of a more accurate analysis and determination of ratios, proportions and framework conditions within which the contradictions referred to can move productively, where the various aspects can condition and complement each other in their specific functions, potentials, and effective modes, such as, e.g., the conditions under which the reduction of social differentiations favorably affects the performance principle or other impulses. And how is this brought about on a personal level through the possibility and reality of performance-related differentiations? Also, what repercussions does the level of social security attained have for applying the performance principle?

If now the attempt is being made theoretically to integrate the performance principle with the dialectics between social equality and differentiation, this then is a special contribution to the general discussion, conducted for years by sociologists<sup>3</sup> and other social scientists, of the connection between social equality or differentiation and the development of our society's impulses.

Social equality as an accomplishment, real tendency, and goal of the shaping of social relations in our society primarily calls for perfecting essential social existential and developmental conditions for all individuals as the development of the social productive forces allows and requires. That is the prerequisite and an element in implementing the transcendent goal of social development, of creating more favorable conditions for all-round personality development. For such a humanistic ideal, posited as indivisible and as valid and obtainable for all individuals, of necessity presupposes equitable social developmental opportunities for the individuality of each. That way alone can one sensibly conceive of a society in which "the free development of each is the condition for the free development of all."<sup>4</sup>

Once the foundations and antagonistic forms of social inequality are eliminated and the workers class--which has the strongest interest in abolishing the "bottom pole" of socialist differentiations--has seized political power, further steps toward social equality above all presuppose the development of the social productive forces, higher productivity as well as structural development, which over the long run aim at canceling those forms of the social division of labor that are the potential "crystallization points" for social differentiations. That mainly happens by such social labor functions becoming technically or socially redundant that always embody relatively unfavorable conditions for personality development. The rank and sequence of the foundations, manifestations, and effects of essential social differentiations to be eliminated, constrained or compensated will thus also greatly be determined by the need to grasp those chain links which in the overall social context prove decisive for more productive conduct by the various groups and for a more effective cooperation among social subjects for implementing joint common interests.

This manner, briefly alluded here to, of embracing in thought social equality, personality development, productive forces development as a contradictory unity, as elements of the upward development of the total social entity, distinguishes in principle the Marxist-Leninist concept of social equality from "crude equalitarian communism" ("rapidly" providing for equal social conditions through redistribution, the "generalizing of shortage," at the cost of choking off the driving forces for economic and cultural development) as from conservative models of thought. The latter reduce equality to a formally equal chance by what are (actually unequal) social individuals to develop "freely" within a social structure characterized by antagonistic socioeconomic inequality and to assume any social position they want, to the extent of their "performances"--from an unemployed to a top manager. From that perspective then, socioeconomically unequal life situations are soon interpreted as the consequence of an unequal use made of "equal" social opportunities by diversely "gifted" or "performance-oriented" individuals; real social equality appears as an obstacle to developing subjective impulses for performance-oriented action. What both modes of thinking have in common is that secondary distribution processes are turned into an absolute as the sphere of equality and the relation between equality and the performance principle is seen as a reciprocally limiting relationship.

Historically adequate steps toward higher levels of social equality are, for one thing, the goal, intrinsic value, and outcome of economic and social development. Then they also encourage the development of productive forces and, via various intermediate links, function as prerequisites and framework conditions for the effectiveness of impulses. That is true also of the performance principle. Such historically concrete developmental forms of social equality like the targeted sociopolitical balancing out of differentiations in the standard of living not caused by differences in performance, and the comprehensive social comfort for all, in many respects expand the effective potentials of the performance principle. The more favorable the social conditions become to appropriate and objectivate abilities and other personal performance prerequisites for everyone, the less individuals are "born into" starting conditions socially unfavorable for developing abilities and talents, or other social factors, over which the individual has hardly any control, determine his situation in and course through life, all the richer then also become objectively the individual's chances to determine his own position and development in society through abilities, efforts, and achievements, all the more socially just then also is applying the equal measure of "work performance" to all, and all the more mobilizing can then become the social recognition that goes with it of diverse results in using social conditions the levels of which are becoming more alike.

The dialectics of social equality and performance principle actually already begins when laying the foundations of socialism and abolishing antagonistic forms of social inequality and their direct consequences and concomitants in economic and social life. The essentially identical socioeconomic position of the individuals as the proprietors of the means of production, mind you, initially is altogether the basic precondition for the all-inclusive validity throughout of the performance principle for all individuals able to work. Only the universality of labor given by it provides the real possibility and objective compulsion to make a living through labor. Only on that basis then can the standard of living of all be essentially determined by society's

productivity level and that of the individual, by his abilities and performance. Equally so, the abolition of discriminations and differentiations of various kinds that contradicted the principle of "equal wages for equal work," the breaking of the bourgeois educational privilege and other steps toward a higher equality of chances in access to education and training, or the surmounting initiated of rural or regional backwardness--to mention just a few things--also were important framework conditions for creating real validity for the principle of "each according to his abilities, each according to his performance."

The thesis that historically appropriate steps toward a higher level of social equality also provide a wider effective radius for the stimulating potentials of the performance principle is supported, among other things, by the following facts and considerations:

(a) The step-by-step reduction of that type or pole of social differentiation that is caused and marked by a far below average level of working conditions and work contents (e.g. hazardous working conditions and monotonous, extremely one-sided work demands) first of all conforms to elemental requirements in our humanistic goal of perfecting the labor process as a field for personality development. With it there arise more favorable prerequisites for the efficacy of the performance principle, among other things, in the following respect: In that the discrepancy between the level of abilities and the work demands shrinks, the principle of "each according to his abilities" can be better fulfilled. More ambitious and diversified labor tasks mean an increase in degrees of freedom through the use of abilities and facilities that can affect, personally or collectively, the quality and scope of the outcome of labor.

Thereby at the same time an elemental prerequisite for having the social recognition of performance differences cause a stimulating effect is improved. Furthermore, with the expanded opportunities for satisfying a rich spectrum of needs through one's activity, all those needs to which a differentiated recognition of performance may tie itself are potentially also getting larger. Finally, to the extent that financial compensation for unfavorable working conditions can be reduced, relatively more funds can be used for paying for the differences in the quality and scope of the outcome of labor. This also helps in giving clearer contours to income relations that are reflecting the diverse levels of work demands and performances. Objectively, that is, the financial compensation for unattractive work--without which some jobs could not even be filled--has a leveling effect on skill-conditioned income differentiations.

Mainly also the following circumstance must be taken into account. The form of essential social disparities referred to--mainly found among the unskilled or semi-skilled--mostly also means fairly unfavorable initial family conditions for the personality development and for appropriating subjective performance prerequisites by the young generation in this group. The same social opportunities for acquiring education and training are used less then. Cutting back the personnel reproduction in this group and sociopolitical measures opposing in a targeted fashion the tendency of accumulating negative developmental conditions therefore serve to exhaust the potential of talent and abilities in the people at large.

(b) In a different way, but in the same direction, another central developmental form of social equality--the social security and comfort for all--affects the effective possibilities of the performance principle. Social security makes possible for all individuals to live a life without any socially caused violent upsets. So it goes a long way toward creating a climate hospitable to lengthy and ambitious personal plans the fulfilment of which increasingly depends on one's own abilities, activities, and achievements. To that the performance principle can and must tie itself in conveying, perceptibly and intelligibly, how much the standard of living depends on performance--above and beyond the socially guaranteed measure.

The sociopolitical and moral leeways for a performance-dependent differentiated distribution of means and possibilities to satisfy a larger number of needs, among other things, expand to the degree that a basic level can be assured for all that conforms to the requirements of political stability and socialist humanity. This, e.g., is foreseeable: When the housing question is solved as a social problem, there will then also improve the opportunities for taking more clearly still into account the special reproduction requirements and needs of particular groups and the individually varying weight of housing needs. Not last, comprehensive social security is one of the decisive foundations for the dynamics in needs and demands, hence for the center of the individual and social impulse potential. Without this foundation of the socially guaranteed security in basic social existential needs and personal chances for development for all, the qualitative growth of needs and demands relative to all domains and expressions of life could not be explained. When satisfying elemental personal existential needs is largely detached from the performance level of the individual, other, higher and more diversified, needs can assert themselves more. That at the same time is an essential prerequisite for a new quality and larger scope of potential performance motives. For objectively and at the social range, economic growth, higher labor efficiency, and the increasing achievements by individuals and collectives are the decisive ways and means to ensure the material and temporal terms for satisfying all demands. Also the grown "non-material" needs for intellectual-cultural activity, interhuman communication, the active exercise of democratic rights, and so forth need more time to be brought to realization. If such needs are not to be satisfied at the expense of others, performance growth alone can provide the time for them.

At what intensity the inevitable connection between need and performance development--ultimately anchored in the basic economic law--becomes motivating is something that largely depends on the extent to which our society's economic, social, and intellectual life is such that this interdependence is mentally grasped, socially experienced, and directly perceived when personal needs are satisfied. That transaction is known to proceed, via the performance principle, through a flexible contact between the measure of work performed on the one side and the income level--exceeding the measure guaranteed by social security principles--and the living conditions made possible thereby, but also the career developments, the social reputation, and further means for need satisfaction, on the other side. That--as long as socioeconomically relevant performance differences exist--connects with real possibilities for differentiating in the standard of living. This type of performance-related social differentiation is in this sense a possible consequence of the performance principle and a condition for its stimulating and just application.<sup>5</sup>

How then does this type of social differentiation that is connected with the enforcing of the performance principle and with the social recognition of real performance differences become integrated, as far as its social quality is concerned, with the dialectics between social equality and differentiation? How does it relate to the long-range goal of further reducing essential social disparities? Let us first look at the differentiation that is connected with a higher financial value put on more complicated and more responsible work that calls for a higher skill level. This form of social performance recognition aims at materially and morally encouraging advanced training and skills, supporting this way also the full and productive utilization of the entire people's qualification potential, and ensuring in scope and quality the personnel reproduction of qualified and social groups. The more one succeeds in improving the suction into highly skilled jobs and the training they require--above all in economically decisive directions--the more strictly can one also apply the function of the performance principle as a filter for a proper qualified access to the jobs and functional groups in question. Through this collusion between the suction and filter effect the performance principle functions as a "social optimization mechanism" between society's available skill and qualification potential on the one side and the level-related differentiated qualification requirements of the social reproduction process with its division of labor, on the other. This function and effect of the performance principle got tied into the dialectics of social equality and differentiation primarily with regard to the following:

1. Material recognition for more highly skilled work encourages an active and productive attitude toward one's own gifts and abilities and the historically achieved degree of real equality of opportunities in terms of social conditions for acquiring more education and training, and hence, the new generation's, all classes' and strata's, access to appropriate social and qualification groups. Adequate income proportions between what specialists and college graduates make are one factor for making college studies attractive, e.g., for children from working class families, so that one will also, above all, productively exhaust the potential of scientific-technological talent from all social groups. They will then help compensate for certain motivational and cognitive "leads" by children from families of intellectuals and assist in a socially balanced personnel reproduction of the intellectuals. Such a (balancing and optimizing) effect would be canceled by a ("leveling") streamlining of qualification-conditioned income differentials above and beyond the historically possible degree.
2. The performance principle at the same time shifts effects of social differentiations in the system of the social division of labor into the distribution sphere. (a) The socioeconomic possibility and need for rating highly skilled labor more highly initially are due directly to the existence, anchored in the structure of the productive forces, of essential level differences in the mental demands labor makes and the economic inequality between simple and complicated labor. The degree to which this socioeconomic difference--apart from that given by the performance principle--is "translated" by the performance principle or supplemented by the income differentials is functionally conditioned by the requirements mentioned, to stimulate the development and optimum distribution of the productive capability potential in society. (b) Through the performance principle, especially the distribution of individuals, proper as to

their skills, over the whole social structure, essential differences--again those that exist irrespective of the performance principle--are reproduced in terms of personnel, in the mental level of labor, and carried on as a trend from the parents' to the new generation. The latter holds true above all for the poles in the mental demand level of labor; for a child from a family of unskilled or semi-skilled workers it is much more complicated to acquire what it takes to start college studies--in spite of identical overall social educational opportunities-- than for children of college graduates.

That is due to a causal chain--effective in the sense of a statistical law--in which the performance principle merely forms the final link: If essential social differences of the kind referred to do exist, they express themselves in sundry ways within the family micro-milieu. This in turn has an early and lasting effect on developing motivational and intellectual prerequisites in the adolescents for their schooling and occupations. So the selection, proper as to activities and performances, necessarily is tied up with the tendency that the most exposed skill groups to a more than proportionate degree reproduce personnel of a new generation out of themselves.<sup>6</sup> This process has a different social content after a socialist intelligentsia was formed and calls for a different evaluation from that in earlier phases of socialist development. For all that, this tendency of self-reproduction has to be countered--as early as possible in the phases of personality development--with a differentiated social and pedagogical set of instruments, in order to encourage an economically, socially, and politically important "broad" reproduction of the intelligentsia out of the talent potential of all classes and strata.

3. If it is true that differences in the level and type of individual performance capability are also genetic endowments or are preset in very early phases of personality development, such individual uniqueness--including the "natural privileges"<sup>7</sup> it contains--through ability and performance-related distribution processes becomes a factor that affects the individual's position in the social structure. To the extent that it contains social differences, individual ones will become social ones. That is an essential and historically concrete form of dealing, productively and socially, with individuality. The more of an equality exists in the initial social conditions for personality development, and the more differentiated one responds to individuality, the more likely it becomes that special talent in various fields and from all groups can be recognized, developed and made effective. Using in this sense the "broad" field of social opportunities that characterizes our society for projecting specific peak qualifications more effectively still for profiling peak performance is a specific advantage of our social and educational system.

Similarly, the other aspect of the performance principle, the social recognition of performance differences in the more narrow sense (subject-related differences in the scope and quality of labor results per time or cost unit), also enters the dialectics of social equality and differentiation. This also involves a "translation" of economic differences in the working sphere into the field of the distribution of means of consumption or other necessities of life; here again an active attitude toward equal social opportunities and diverse individual abilities and needs is being stimulated, to mention but some criteria.

Yet at the same time one feature becomes still more prominent in the type of social differentiation that is connected with the application of the performance principle: This performance-dependent differentiation proceeds within each social group, running straight through all social and qualification groups (wherefore necessarily the performance peak of any given lower qualification group, e.g., reaches the income level of the lower "performance group" in the next higher qualification level). It is still less directly predetermined by being born into division of labor and socioeconomic structures, but it is much more dependent on the subject, the result of personal abilities and efforts. These criteria, mainly the higher degree of subject dependency, it seems to me, display the contours of the historically last type of social differentiation in the individuals' standard of living.

It follows from all this by way of summary and conclusion:

1. Applying the principle of "each according to his abilities, to each according to his performance" does not causatively and compellingly produce differentiations in the individuals' and groups' levels of social existence. As long as socioeconomic differences exist, however, caused by the structure of the productive forces and the division of labor system, on the one hand and, on the other, economically relevant differences in work performance are givens, enforcing the performance principle of necessity connects with the reproduction, handing on, and supplementing of these differentiations:

--In the outcome of the distribution of individuals, proper as to their abilities and performance, over the existing division of labor system and the corresponding groups, social differences are also reproduced in terms of personnel along with it.

--In so far as existing social differences in the dimension of the mental demand level of labor and--derived from that--in the parents' qualification level imply diverse conditions and chances for the growing generation's appropriating certain performance prerequisites, that consequence, or the accompanying manifestations of social differentiation, are passed on in tendency over the performance principle in a weakened intensity.

--Differences in the level of qualifications or other labor demands and the performance achieved are tied up with, complemented by, differences in income and other living conditions.

Generally then, socioeconomic differentiations rooted in the working sphere are carried over through the performance principle into other domains of life and distribution processes. In terms of their genesis they are thus secondary. The degree to which this "translation" into performance-dependent differentiation spans proceeds is oriented to the functional requirement, the productive use--expanded reproduction, optimum distribution, effective embodiment--of the employment potential of society it can stimulate. If one furthermore takes into consideration that the performance-related differentiations of an individual lifestyle are more subject-dependent and individually malleable, it becomes apparent that this is a different type of social differentiation than the one that is anchored in the division of labor structures. It follows from this: Attempts at surmounting social differences "more" or "faster" in the

distribution relations referred to than in the socioeconomic relations on which they are based, whereby one would want to, as it were, cancel the consequences and necessary concomitants becoming visible through the performance principle, are bound to come also at the expense of the stimulating, optimizing functions of this principle. Not from the final link, but primarily from the socioeconomic base, from productive forces development, comes the reduction of the scale of social differentiation reproduction and, ultimately, its cancellation.

2. The stimulating potential of the performance principle likewise is rooted in the level of equality achieved in the socioeconomic conditions for existence as in the real possibility of being able directly to influence one's standard of living through applying abilities and efforts in the labor process. To put it plainly: The more the fundamental socioeconomic conditions for the appropriation and embodiment of individual capabilities assimilate (on their level) and the more attractive the differentiation spans are within which an individual can in a differentiated manner satisfy performance-dependent needs, the more intensive can become the stimulating effect of the performance principle. Thus it provides the potentials found in the collusion between the real social equality and the potential performance-dependent differentiation in living conditions.

3. The sociopolitical distribution processes proceeding according to the principles of social equality and security and the relations between the individual and society, in conformity with the performance principle, in their socioeconomic foundations, their sociohistoric quality, and their overlapping social functions form a unity. Both express the potential measure of social equality due to the state of development in the social productive forces--the type of the social division of labor characteristic of it and the level of productivity--and both aim at perfecting the conditions for the development and productive realization of abilities and needs. In both "cycles" is expressed the connection, as vested in the basic economic law, between the end and means of socialist working and producing. At the same time they are also differentiated in their concrete functioning mode as factors of economic and social conduct from individuals and collective subjects. The sociopolitical distribution processes that are not differentiated in accordance with individual performance levels are creating essential social, political, ideological, and demographic prerequisites for impulse development throughout the commonweal.

Be it the gradual elevation of the level of satisfying basic needs, the vital necessities (housing, health, social comfort, education, and so forth) for all, be it the concentrating of funds on complexes of needs (e.g. the housing construction program) that from the overall social point of view are crucial links in the chain of social and economic progress, or the priority improvement of working and living conditions for specific groups--all that also works directly as framework conditions for performance growth (by way of social experience, political stability, reproduction needs effectively realized, demographic processes and so forth). It produces a social feeding ground for picking up and expanding effective possibilities for the totality of the directly motivating and stimulating factors. Based on that, while also in contrast with it, through the performance principle is determined directly by the performance level of the individual the upper level of identical or the degree of satisfaction

of other needs. The two types of distribution processes complement and condition each other in their specific functioning mode. An increasing level of social equality and security in basic living conditions thus makes possible--as made clear already with regard to several other points--a higher effectiveness of the performance principle.

For the specific potentials of the performance principle to be able to take effect as an impulse for performance-oriented action, certain quantitative relations, however, are also needed, relations of measure within the radius of which performance differences can crystallize in differentiated living conditions and ways of life. The "attractiveness" of the social performance recognition facilitated by the performance principle, you see, is a "resultant" of the various social possibilities and ways for satisfying personal needs. Making it prevail as a predominant tendency, therefore, calls for making perceptible constantly and with all consistency the spans society defines as being dependent on performance. Only when the performance principle, as a flexible link between the individual performance level and the living conditions, is made to prevail over the whole scale of performance differences, can it motivate working people, both the stronger and weaker performers and can performance-promoting impulses evolve from it permanently. That surely is objectively a very complicated task.<sup>8</sup>

It conforms neither with the performance principle requirements nor with the social security principles when income elements that are clearly defined as performance-related are at times, inconsequentially, turned gradually into "fixed" salary components, when an engineer who is ill-suited for research is not being purposefully assisted in finding a job of greater benefit to society, or when opportunities are hardly used for reconfirming or defending in the light of altered conditions and requirements a financial and social status that had been earned by performance and skills. Just as little does it have anything to do with granting privileges to persons or groups when top achievements and performers, especially in the strategically decisive field of science and technology, are socially recognized in every way or are socially awarded by above-average and performance-promoting working and living conditions. When a nation like that becomes the spontaneous reaction it rather indicates some inadequately clarified ideological questions of economic and social progress under prevailing conditions. It is by all means a productive side-effect of the consistent implementation of the performance principle that it evokes deeper thought and understanding about the goals, ways and conditions of implementing our economic and social strategy.

#### FOOTNOTES

1. Cf. E. Honecker, "Zur Vorbereitung des XI. Parteitages der SED--10. Tagung des ZK der SED" [Getting Set for the 11th SED Congress--10th SED Central Committee Session], Berlin, 1985, p 29.
2. Elsewhere we dealt with the problems of a greater use of specific forms of performance recognition in R&D, cf. F. Adler, "Requirements and Experiences in Enforcing the Performance Principle in Industrial Research," THEMATISCHE INFORMATION UND DOKUMENTATION, Series A, No 51, Berlin, 1985.

3. Cf., *inter alia*, the articles by R. Weidig, G. Winkler, and M. Loetsch in *DEUTSCHE ZEITSCHRIFT FUER PHILOSOPHIE*, Nos 6, 1982 and 1, 1985.
4. Karl Marx/F. Engels, "Communist Manifesto," MEW, Vol 4, p 482.
5. "Possible," because the implementation of the two basic demands of the performance principle is by no means causative and inevitable or connected forever and in every case with the reproduction of social differentiations in the standard of living. The principle of "from each according to his abilities" initially immediately aims at socially recognizing diverse types of talent and suitability in the educational and labor process and in the distribution of individuals among educational courses and occupational and social positions. Its implementation is tied into the reproduction of social differentiations only in so far as, on the one hand, the acquisition of an educational and qualification level by the adolescents--passed on through family circumstances--is affected by the existence of social differences in the level of mental work and, on the other hand, the distribution of individuals in terms of qualifications also brings access to social groups among which social differences exist. Likewise, the principle of "to each according to his performance" certainly can be practiced consistently in a collective and have a stimulating effect without performance differences and, consequently, income and other social differentials coming to show up more clearly. In that the possibility to satisfy a broad scale of needs relative to performances activates an individual for developing and using his own specific performance potentials, reinforces contest, and management activity and job distribution pay pains-taking attention to individual and typical motivations and abilities, one can, in tendency, counteract the genesis of performance differences.
6. By the way: It also is fully in line with the performance principle that children or adolescents getting grades toward their high school graduation which are like the ones of children from a more stimulating milieu than theirs, which is comparatively less favorable in terms of typical social family circumstances, are giving preferential treatment. The point is that someone who gets the same results under external impediments produces higher subjective achievements and obviously has more pronounced personal performance prerequisites; he is also likely to be more of an achiever in his working life later.
7. K. Marx, "Critique of the Gotha Program," MEW, Vol 19, p 21.
8. We have dealt elsewhere with some points of this objective intricacy, cf. F. Adler, "On Some Connections Between Performance Principle, Performance Attitude, and Personality Development," "Jahrbuch fuer Soziologie und Sozialpolitik," 1985, pp 71 ff.

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